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WOMEN IN THE MILITARY: PREGNANCY COMMAND CLIMATE, ORGANIZATIONAL BEHAVIOR, AND OUTCOMES

Part II

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The primary accomplishment of this study was the documentation of pregnant servicewomen's perspectives on what it means to be pregnant in the military and how work experiences influence delivery outcomes, performance, intentions to stay in the military, psychological well-being, and actual turnover. Comparisons of the demographic characteristics of active duty pregnant women with the population of military women were made. A measure of Work Climate was developed and validated. A longitudinal assessment of maternal medical conditions, turnover, work climate, work reassignment, career opportunities, work absences, turnover and delivery outcomes were tested. Most were not reassigned work due to pregnancy. Primary reasons were exposure to hazardous materials and physical requirements. Reassigned participants were more likely to intend to leave the organization. The majority reported pregnancy had no effect on career opportunities. Psychologically healthy pregnant personnel were more likely to perceive better career opportunities, coworker support and intended to stay in the organization. The majority worked at least 40 hours a week and missed less than one day per month throughout pregnancy. Personnel with more medical conditions missed more work. The majority intended to stay prior to and during pregnancy. Turnover intentions and actual turnover were positively associated. Neither turnover intention nor actual turnover were significantly related to baby outcomes. Covariance structural model results indicated rank, tenure, prior turnover intentions, work climate, and health affected turnover. Maternal medical conditions, psychological health, and work climate predicted complicated baby outcomes. Demographics did not predict adverse delivery outcomes. In a longitudinal model, only changes in psychological health predicted adverse delivery outcomes.

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Women in the Military: Pregnancy, Command Climate, Organizational Behavior, and Outcomes

PART II

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Abstract

The findings from this study of active duty pregnant women reflect reality. The results were complex and messy and raised more questions about the relationship between work and pregnancy. More research is needed to replicate results and further test hypothesized relationships among work factors, pregnancy, and outcomes. One of the primary accomplishments of this study effort was the documentation of pregnant servicewomen's perspectives on what it means to be pregnant in the military and how work experiences influence delivery outcomes, performance, intentions to stay in the military, psychological well-being, and actual turnover.

Three broad findings resulted from this study of active duty pregnant women and work experiences. The study provided a comparison of the demographic characteristics of active duty pregnant women with the population of military women. A measure of Work Climate that addressed coworker support, command support, and pregnancy support was developed and validated in the study. A longitudinal assessment of maternal medical conditions, turnover, work climate, work reassignment, psychological well-being, coping resources, and transition stress was completed.

Hypotheses regarding work reassignment, career opportunities, work absences, turnover and delivery outcomes were tested. The majority were not reassigned work due to pregnancy. The primary reasons for reassignment were exposure to hazardous materials and physical requirements. Participants who were reassigned were more likely to intend to leave the organization.

The majority reported that pregnancy had no effect on career opportunities. Psychologically healthy pregnant personnel were more likely to perceive better career opportunities, coworker support and intended to stay in the organization.

The majority worked at least forty hours a week and missed less than one day per month throughout pregnancy. Personnel with a greater number of maternal medical conditions missed more work. Work absence was not retained in the model predicting turnover.

Prior to pregnancy turnover intentions, turnover intentions during pregnancy, and actual turnover were assessed. The majority intended to stay prior to and during pregnancy. Turnover intentions and actual turnover were positively associated. Neither turnover intentions nor actual turnover were significantly related to baby outcomes. Covariance structural model results indicated that rank, tenure, prior turnover intentions, work climate, and health predicted turnover.

Maternal medical conditions, psychological health, and work climate predicted complicated baby outcomes. Demographics did not predict adverse delivery outcomes. In a longitudinal model, only changes in psychological health predicted adverse delivery outcomes.

Recommendations were provided for each topic addressed and for the overall study. Broad recommendations included continued training, creation of a handbook for the treatment of pregnant personnel, the inclusion of psychological assessment and work climate in prenatal care, and the establishment of a centralized pregnancy database.

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STUDY DESCRIPTION AND OVERVIEW

This study investigated work experiences, delivery outcomes, performance, psychological health, and turnover of active duty pregnant women. Questionnaires were administered at two different times to active duty obstetrics patients who volunteered at Walter Reed Army Medical Center in Washington D.C., The National Navy Medical Center in Bethesda, Maryland, and Womack Army Medical Center in Fayetteville, North Carolina. Participants were active duty members of the Army, Air Force, Navy, Marine, Coast Guard and other uniformed services. Findings from the initial questionnaire administration were detailed in a Defense Technical Information Center (DTIC) report entitled "Women in the Military: Pregnancy, Command Climate, Organizational Behavior and Outcomes, Part I" (Evans & Rosen, 1996).

This technical report details results from the follow-up questionnaire, delivery outcome logs, and turnover data. Relevance of the study, objectives and introduction was repeated from the initial proposal (Evans, 1994) and DTIC report (Evans & Rosen, 1996). An updated literature review is provided.

Relevance to servicewomen

Of the issues debated and researched in the military regarding women, one of the most controversial is the impact of pregnancy and childbirth on morale, manpower loss, attrition, and assignment policy. Absent from the research is the pregnant servicewoman's perspective on what it means to be pregnant in the military and how her work experiences influence delivery outcomes, performance, intentions to stay in the military, psychological well-being, and turnover. This study identified the work experiences and major work stressors associated with pregnancy from the service member's perspective and evaluated the extent to which work and stress affected delivery outcomes, performance, and turnover.

Program relevance

A thorough investigation into the experiences and attitudes of pregnant women in the military was warranted. A better understanding of the work experiences of pregnant servicewomen may benefit the service by 1) reducing the stress pregnant servicewomen experience; 2) reducing the number of lost duty days due to stress related complications of pregnancy; 3) reducing negative pregnancy outcomes; 4) improving servicewomen's attitudes about the military; 5) enhancing retention of women following pregnancy and during parenthood; and 6) improving or maintaining pregnant servicewomen's performance and morale.

The study falls under STO III.S Military Life and Mental Health. The mission of the Army Medical Department to "conserve the fighting strength" requires a base of knowledge of those factors that affect the health and strength of the force. The information generated by this study of Women in the Military: Pregnancy, Command Climate, Organizational Behavior, and Outcomes identified the pregnancy related health issues and potential effects on units and their personnel.

Objectives

A. Examine the role of a supportive command climate in pregnant servicewomen's performance, career intentions, and delivery outcomes.

B. Examine the extent to which pregnant women experience positive and negative feedback from commanders and coworkers.

C. Investigate career choices, intentions, and planning before, during and after pregnancy.

D. Investigate the effects of social support on delivery outcomes, morale, attitudes about the military, performance, and retention.

E. Assess the relationship between the timing of pregnancy: Planned and unplanned; TO&E or TDA assignment, leadership or staff position; and positive/negative experiences, performance, and retention, morale, and attitudes about the military.

F. Examine the effects of pregnancy related work reassignments. Do servicewomen perceive reassignment as appropriate or unnecessary? Are reassignments to meaningful work or menial tasks? Do reassignments affect retention intentions?

G. Investigate whether pregnant women who live on base utilize military provided social support resources more than those who live off base.

UPDATED LITERATURE REVIEW

Research about pregnancy primarily focuses on maternal medical conditions such as hypertension and diabetes and fetal outcomes such as low birth weight. While biological risk factors have long been linked to poor delivery outcomes, the effects of psychological health and work factors have largely been ignored. In regard to pregnancy, military policy makers focused primarily on issues related to deployment and assignment (GAO, 1993; Report to the President, 1992).

A more holistic approach to assessing birth outcomes could help define the essential contributions of psychological, sociological, and biological factors and provide a more rational basis for the interpretation of research findings. In order to reach the year 2000 national health objective to reduce adverse birth outcomes, further research into factors beyond medical indicators is needed (Healthy People 2000, 1991). Congress responded to the need for increased research into women's health with The Defense Women's Health Research Program (DWHRP). The DWHRP provided the funding for this research effort that investigated active duty pregnant women's perspectives about work and pregnancy.

The most common source of data in past research is secondary data from hospital, state, or national birth and death registration databases. These databases have limited information. Absent from the databases is information about maternal psychological health, work factors, and social support. In this study primary data about these factors was collected.

The literature review is both complex and compact. The interested reader is encouraged to read the referred citations for more detailed information. Manpower issues and laws regarding the treatment of pregnant women are discussed first and are followed by the impact of pregnancy on work reassignment and turnover. Effects on delivery outcomes are divided into three sections: medical conditions, psychological health, and work climate.

Pregnancy and Manpower Issues

Women are vital to military readiness. The combined number of women in the Armed Forces is approximately 191,400 or 14% of the active duty force (Defense Manpower Data Center, 1996). The average woman is pregnant for a small proportion of her work life and some women never do become pregnant. Research indicates that 8%-9% of military women are pregnant at any given time (Calderon, 1994; Thomas & Edwards, 1989; Thomas, Thomas, & Robertson, 1983) which translates to less than 1% of the total force strength.

Loss of time due to pregnancy is varied. Normal healthy pregnant women: attend regular medical appointments monthly during the first six or seven months, once every two-week period during the last trimester, and weekly during the last month, have few pregnancy-related sick days, and are hospitalized for labor, delivery, and recovery for a few days. Military pregnant women are given six weeks of maternity convalescent leave following birth. Complicated pregnancies can result in total bed rest for part or for the entire pregnancy. When necessary, commanders must redistribute work to the remaining workforce.

Because pregnancy is considered a medical condition there is no replacement of personnel, regardless of the amount of time pregnant personnel may be absent from work due to pregnancy related conditions. Work restrictions differentiate pregnant women from their coworkers and may be a source of support or stress. Leaders and coworkers may resent pregnant personnel because they receive full pay and benefits, but are exempt from some work and miss work for pregnancy related conditions. Leaders and coworkers may also resent pregnant personnel because their workload is increased due to pregnant personnel work restrictions and absences. Leaders and coworkers may be reluctant to provide social support to pregnant personnel whom they perceive cause an increase in their workload. In this sense, the work climate is a potential source of stress for pregnant personnel. Conversely, leaders and coworkers may be a source of support.

The degree to which pregnancy affects performance has not been documented. Documentation does exist substantiating that the number of days lost each month for military men and women are virtually the same (Brown, 1993). Other documents indicate that military men miss 67% more work than women due to sports and recreation injuries (Smith & Mowry, 1992; Hackworth, 1991; Greenberg, 1990). Pregnancy, compensated by good leadership, causes less turmoil in a unit than unexpected injuries due to sports and recreation. An alternative threat to readiness is turnover.

Work & Pregnancy Laws

Three federal laws designed to protect workers are relevant regarding pregnancy: Title VII of the 1964 Civil Rights Act, the Pregnancy Discrimination Act of 1978, and the 1993 Family and Medical Leave Act. Title VII made it unlawful for employers to discriminate against individuals or deny privileges of employment based on gender. The Pregnancy Discrimination Act of 1978 mandated that employers must treat pregnant and non-pregnant

employees in the same manner. The Family and Medical Leave Act granted personnel up to 12 weeks of unpaid leave per year for the birth or adoption of a child.

The Supreme Court in U.A.W. v Johnson Controls (1991) ruled that discrimination based on sex or pregnancy is legally unacceptable. Whether or not to become pregnant and to what extent to protect one's future offspring from hazards are private decisions in which the employer has no role except to provide technical information about exposure to risks. If a reproductive health risk exists, it must be addressed by means other than involuntary exclusion. An extensive discussion of legal cases and interpretation is available in Oakes & Kidwell (1995).

Military organizations are not under the jurisdiction of these federal laws. Military personnel are subject to the Uniformed Code of Military Justice (UCMJ) which does not have equivalent laws. In contrast, a collection of regulations governs the treatment of pregnant military personnel. The regulations are consolidated into U.S. Air Force Instructions 44-102, 40-502, 48-123, 36-2110 (1994, 1994, 1994, 1996); U.S. Army Regulation 135-91 (1994); Marine Corps Order 5000.12C (1988); and Operational Navy Instruction 6000.1A (1989).

Regardless of service component, military women are not deployable when pregnant and are permitted by regulation to voluntarily leave military service if the separation is in the best interest of the service. Medical profiles restrict work activities and exempt pregnant military women from deployments, regular physical training and tests, weight standards, nuclear biological chemical warfare training, and other potentially harmful work duties. Pregnant women are released from duty to attend medical appointments and are given rest periods from work in accordance with medical advice. In addition, there are job specific restrictions for pregnant personnel. For example, pregnant women are restricted from flying without a medical review and command consult. Pregnant Navy women at 20 weeks gestation are transferred from duty at sea (U.S. Air Force Instruction 44-102, 1994; U.S. Air Force Instruction 40-502, 1994; U.S. Air Force Instruction 48-123, 1994; U.S. Air Force Instruction 36-2110, 1996; U.S. Army Regulation 135-91, 1994; Marine Corps Order 5000.12C, 1988; and Operational Navy Instruction 6000.1A, 1989).

Nondeployability and work reassignment are restrictions in work for which, unlike their civilian counterparts, pregnant military women have no choice. The reasons behind work restrictions and reassignment are complex.

Pregnancy and Work Reassignment

There are plausible positive and negative reasons underlying the work reassignment of pregnant women in the military. On the positive side, reassignment of pregnant women is based on the protection of the mother and the child and/or for unit readiness. Work reassignments may be necessary when the health of the mother or unborn child is at risk. Occupational hazards such as exposure to radiation, handling harmful chemicals, or physically strenuous job requirements may justifiably require work reassignment for the duration of pregnancy (Scialli, 1993; National Institute for Occupational Safety and Health, 1977). Maternal medical conditions may also restrict work activities. Work in austere environments represents another potential threat to pregnant women because definitive health care is not readily available and because working conditions are harsh due to the presence of hostile enemies and rudimentary living conditions. Furthermore, pregnant women may be a threat to unit readiness due to physical limitations and/or inability to perform the full range of job requirements.

Alternatively, there are potential negative motivations underlying the work reassignment of pregnant military personnel that may constitute unnecessary discrimination. Erroneous assumptions about the capabilities of pregnant women may lead to unnecessary work reassignment. For example, beliefs that pregnant women are unproductive, sickly, and delicate, may lead to unnecessary work reassignment. Leaders who lack a basic knowledge of pregnancy, who do not possess the skills to appropriately utilize pregnant workers, and/or who resent pregnant women working may seek to overtly or covertly punish pregnant women through unnecessary and/or meaningless work reassignment. The frequency and factors regarding the work reassignment of pregnant military women are undocumented.

Regardless of the reasons, work reassignment may devalue the competence of pregnant women and negatively impact psychological well-being, work effort, and retention. Unnecessary and/or menial work reassignments can be degrading, demoralizing, and communicate to the pregnant woman that she is being punished or is not valued. Conversely, necessary and meaningful work reassignments may provide an opportunity for pregnant women to have positive work experiences outside of their normal career paths.

Work reassignment may create a stressful even hostile environment for pregnant service women. Peers and leaders may resent pregnant service women because of increases in workload and because they receive full pay and benefits, but are exempt from some work and miss work for pregnancy related conditions. The result may be negative feelings, reactions, and feedback toward a pregnant service woman that may in concert negatively affect her psychological well-being, work effort, and turnover intentions.

We hypothesized that women who were reassigned due to their pregnancy would report reduced psychological well-being, work effort, and retention intentions. Furthermore, we hypothesized that legitimate reasons for reassignment and perceptions that the reassignment was necessary and/or meaningful would enhance psychological well-being, work effort, and retention intentions.

Pregnancy and Turnover

Positive and negative work experiences during pregnancy may play a major role in turnover. Past studies have shown that males and females fail to complete their first term of military service at comparable rates (GAO Report 1990; 1993). Female attrition is primarily voluntary and may be due in part to work experiences during pregnancy (Fletcher, McMahon & Quester, 1993; Steinberg, Harris & Scarville, 1993; Quester, 1990). In contrast, involuntary separation due to disciplinary problems is the primary reason for the loss of male service members (GAO Report, 1990).

Separation data for enlisted personnel were provided by the Office of the Assistant Secretary of Defense (1997). Similar separation data for officers was not available because officer personnel are managed differently. Officers are under contract only for their initial tour of duty. After that officers resign their commission when they want to leave.

There was a total of 354,205 male and 51,695 female enlisted personnel eligible for reenlistment in fiscal year 1995. About 30% of the males and 20% of the females completed their enlistment and left. In fiscal year 1995, 0.22% or 500 male enlisted personnel were separated for pregnancy or parenthood reasons compared to 13.22% or 4,015 female enlisted personnel. In contrast, 7.67% or 16,833 male enlisted personnel were separated for misconduct compared to 3.46% or 1,138 female enlisted personnel.

Female attrition is primarily voluntary (Fletcher, McMahon, & Quester, 1993; Steinberg, Harris, & Scarville, 1993; Quester, 1990; Royle, 1985; 1983) and may be due in part to work experiences during pregnancy. Pregnant service members are permitted by policy to voluntarily leave service. Pregnant female marines who left service before the end of their first enlistment were surveyed about their reasons for leaving military service. The most important predictor of attrition was poor supervisor and work group relationships. Family and career orientation and management of stress were secondary reasons. Recruiting, training, and assignment practices had little relationship with attrition. (Royle, 1985).

Butensky (1984) found a consistent devaluation of the competence of pregnant women in comparison to non-pregnant women and men. Male supervisors were more negative than females regarding pregnant women's performance in the work place. Halpert, Wilson, & Hickman (1993) found that pregnancy was a source of bias and negatively affected performance appraisals. As discussed, loss of manpower and work restrictions may create a stressful, even hostile environment for pregnant women. The result may be negative feelings, reactions, and feedback toward pregnant women which in turn may affect pregnant personnel performance and retention.

These studies suggest that the work experiences of pregnant military members may play a primary role in the decision to leave. Additionally, poor delivery outcomes may contribute to increased intentions to leave the organization in conjunction with poor work experiences while pregnant. The degree to which pregnant personnel perceive that pregnancy positively or negatively affects their career opportunities may contribute to increased turnover and thereby reduce military readiness to some extent.

Delivery Outcomes: Medical Conditions and Demographics

Infant mortality rates in the United States have decreased over the past 25 years as a result of advances in obstetric and neonatal intensive care practices and access to health care (Rawlings & Weir, 1992; Healthy People 2000, 1991; National Center for Healthcare Statistics, 1990). Despite the decrease in mortality, there has been little improvement in the incidence of low birth weight (< 2500 g; 5 lb., 5 oz.). The current rate of low birth weight in the United States is about 7% (Center for Health Economics Research, 1993). A multidisciplinary investigation into the contribution of biopsychosociological factors may provide new directions for improving delivery outcomes.

The principal factors known to adversely affect birth outcomes include maternal demographics such as age, race, education, marital status, and socioeconomic status and biomedical factors such as obstetric history, hypertension, diabetes, toxemia, incompetent cervix, adequacy of health care, hazardous material exposure, smoking, and gestational age, (Adams, Read, Rawlings, Harlass, Sarno, & Rhodes, 1993; Paul, 1993; Ramirez, Grimes, Annegaers, Davis, & Slater, 1990; Kleinman & Kiely, 1991; Kleinman, Fingerhut & Prager, 1991; Gould, Davey & LeRoy, 1989; Spurlock, Hinds, Skaggs & Hernandez, 1987; Wise, Kotelchuck, Wilson & Mills, 1985; Institute of Medicine, 1995; Bross & Shapiro, 1982). However, the risks for low birth weight and other adverse outcomes are still not well established and the characteristics of prenatal care which provide the greatest reduction of risks have yet to be determined (Peabody, 1995; Kogan, Alexander, Kotelchuck, & Nagey, 1994; Goldenberg, Patterson & Freese, 1992).

Many studies have identified racial differences in infant mortality in the United States (Center for Healthcare Economics Research, 1993; Kleinman & Kessell, 1987). Although black infants are twice as likely to die as white infants, black and white infants of normal birth weight have equivalent mortality rates. Consistently high rates of mortality among black infants in the United States are attributed in part to poverty and limited access to health care. Persistent racial disparities exist in birth outcomes even when social factors, demographics, smoking, alcohol and health coverage are controlled (McDermott & Amorosino, 1992; Wise et al., 1985). These observations suggest that the social character of race is quite complex and that analyses that cannot account fully for racial disparities in infant mortality should be interpreted with caution.

Obstetric care in the military health system does not affect the rate of low birth weight, but does reduce the mortality for black infants (Greenburg, Yoder, Clark, Butzin & Null, 1993; Alexander, Baruffi, Mor, Kieffer & Hulsey, 1993; Kugler, Connell & Henley, 1990). Controlling for sociodemographic factors did not substantially affect the risk patterns for neonatal mortality or low birth weight. While there may be sociodemographic and environmental differences between military and civilian blacks, there is no evidence that these differences are profound enough to account for the delivery outcome differences in the two communities. Military health care and employment appear to have a protective effect for black infants.

Maternal medical conditions are indicators of health. Women with a greater number or severity of medical conditions were thought to be in poorer health than women with fewer medical conditions. Consistent with the literature, we hypothesized that maternal medical conditions and demographics would predict delivery outcomes.

Delivery Outcomes: Psychological Health

Psychological distress can be depicted as a behavioral display of one's affective and physiological responses to stress. When the demands of a stressful situation exceed one's available resources to cope, stress levels are increased. Psychological distress is influenced by a complex interplay of psychological, social, cultural, work, and biological factors. Individuals differ in stress threshold and tolerance levels (Lazarus & Folkman, 1984).

The degree to which pregnant women experience physiological, psychological or occupational stress is influenced by the general health and psychological state of the woman. Psychologically, women are challenged in preparation for labor, delivery, and parenthood. The fatigue of pregnancy combined with the physical demands of work and home responsibilities affect the ability of some women to cope with work demands or to adapt to changes in the job, home, or her pregnancy (National Defense University, 1993; Killien, 1990; Brown, 1986; Rubin, 1984; Lederman, 1984; Leifer, 1980; Kleinman, 1977; Coleman & Coleman, 1971; Lubin, Gardener & Roth, 1975; Caplan, 1957, 1964).

Military service alone may have a deleterious effect on women's health because of the stress associated with minority status in a predominantly male organization and/or sexual harassment (Kanter, 1977). Minority status and harassment may contribute to an increase risk of ill health among military women. Pregnancy may exacerbate problems because it is a uniquely female medical condition that can further isolate women from the organizational mainstream (Hoiberg & White, 1991; Hoiberg, 1982; 1984).

Chronic stress is one of the most serious occupational health hazards (Killien, 1990). Millar (1992, p. 5.) argues that job-related stress and other psychological disorders are rapidly

becoming one of the most pressing occupational safety and health concerns in the country. Increases in worker's compensation and social security disability payments based on job stress support his argument.

Several studies suggest that psychosocial stress is a risk factor in adverse perinatal outcomes (Splonskowski, 1992; Glenn & Moore, 1988; Arizmendi & Affonso, 1987; Norbeck & Tilden, 1983; Robson, 1982; Beck, Siegel, Davidson, Kormeier, Breitenstein & Hall, 1980; Kruger, 1979). Lobel (1994) conducted a review of the literature and concluded that most of the studies failed to conceptualize psychological health reliably which resulted in equivocal findings about its role in pregnancy. Methodological and design flaws such as nonstandard measures of psychological health and failing to control for demographics, parity, gestation, and maternal medical conditions were noted. Existing studies exhibited major limitations including inadequate control for confounding factors (Fox, Harris & Brekken, 1977), recall bias (Mamelle, Laumon & Lazar 1984), and failure to directly measure maternal stress in delivery outcomes (Homer, James & Siegel, 1990). In the few studies that controlled for noted problems, Lobel (1994) found that maternal stress was a predictor of adverse birth outcomes. Absent from the studies was an examination of psychological health in the context of work.

Zimmer-Gembeck and Helfand (1996) were also critical of research on psychosocial factors influence on birth outcomes such as low birth weight. Like Lobel (1994) they criticized the sample size used, failure to control for biomedical risks, and limited availability of psychosocial and other data in past research. A different limitation of past research addressed was the use of self-report surveys. They indicated that self-reports of psychological data may be biased and misinterpreted and recommended the use of open ended questions and clinical assessment. In their study, psychosocial data was abstracted from medical records. There are several shortcomings associated with this approach. First, bias and misinterpretation by providers and abstractors may be present. Providers may not be aware of psychosocial problems, may not document known psychosocial problems, or may document psychosocial problems inconsistently. Pregnant women may receive psychosocial care from a medical provider other than their obstetrician and may not share that information. Abstractors may be unable to interpret documentation about psychosocial problems. Furthermore, Zimmer-Gembeck and Helfand coded psychosocial factors categorically as either present or absent. This is a limitation because psychological well-being is better characterized as a continuum rather than present or absent. Severity of psychological symptoms was not addressed.

Psychological stress may affect delivery outcomes in a number of ways. High stress may be associated with increased maternal medical conditions that may adversely affect delivery outcomes. Maternal medical conditions may also independently adversely affect maternal stress. Pregnant women with serious or numerous medical conditions may feel poorly, may experience increased anxiety about the health of their unborn child, and may experience stress related to work restrictions and withdrawal of support from their spouse or partner, coworkers, and supervisors which in concert may negatively affect delivery outcomes.

Folkman, Schaefer, and Lazarus (1979) describe social support as a coping resource during stressful life events such as pregnancy. The presence of a social support system indicates that the individual is loved, valued, cared for, and is a member of a network of mutual obligation. Social support was found to buffer stress and positively affect maternal functioning (Conic, Greenberg, Robinson & Ragozin, 1984; Brown, 1986). Psychological stress to some degree is experienced by all pregnant women. The good new is that pregnancy related stress can

be successfully ameliorated by social support. Support may help individuals gain, regain, or use personal strength during difficult adaptive periods.

There is little information available regarding the effectiveness of psychosocial assessment and intervention in prenatal care programs. Aaronson (1989) and Albrecht and Rankin (1989) examined the effects of perceived and received social support on health behaviors during pregnancy. Although the research evidence is not strong, a few studies (Oakley, 1990; Rothberg & Lits 1991) reported that social support programs in prenatal care were associated with a reduction in the rate of low birth weight. Zimmer-Gimbeck and Helfand (1996) reported that receiving over 45 minutes of psychosocial services during pregnancy was related to a reduced risk of low birth weight.

Given the transience of military life, military women have less access to traditional social support systems such as family and long time friends (Montlavo, 1976). The absence of traditional support systems may further impair coping capabilities during pregnancy.

Like maternal medical conditions, psychological well-being is an indicator of health. Women with a greater number of psychological symptoms were thought to be in poorer health than women with fewer psychological symptoms. We hypothesized that maternal medical conditions and psychological well-being would jointly predict delivery outcomes. Social support was hypothesized to ameliorate psychological symptoms and improve delivery outcomes.

Delivery Outcomes: Work Climate

Comparisons of delivery outcomes for working and nonworking pregnant women have mixed results (Killien, 1990; Council on Scientific Affairs, 1984; Goffin, 1979). Some research shows that maternal work contributes to low birth weight and preterm delivery (Alegre, Rodriguez-Escudero & Cruz, 1984; Mamelle et al., 1984). Other studies show no connection between maternal work and birth outcomes (Colie, 1993; Brown, 1987; Marbury, Linn, Monson, Wegman et al., 1984).

Studies on military personnel suggest that military women are at increased risk for adverse pregnancy outcomes. Despite defined work limitations and access to health care, military women represent a high risk pregnancy population with respect to cesarean section rate, preterm complications, hypertension, antenatal hospitalization, and maternal and fetal outcomes when compared to civilian women (Adams, Harlass, Sarno, Read & Rawlings, 1994; Magann & Nolan, 1991; Fox et al., 1977). Conversely, Messersmith-Heroman & Heroman (1994) and Buttemiller (1984) found no difference in pregnancy risk factors or birth outcomes between active duty military and civilian working women.

Adams, Harlass, Sarno, Read, and Rawlings (1994) reported that severe antenatal morbidity is common in healthy enlisted women. Enlisted military women have a 23% rate of antenatal hospitalization compared to civilian women who have a 14.6% rate (Franks, Kendrick, Olson, Atrash, Saftlas & Moien, 1992). Poor outcomes were associated with high medical costs and manpower loss.

Rawlings and Weir (1992) examined race and rank specific infant mortality in military populations and found no difference in mortality rates for junior enlisted soldiers and officers. Black infant mortality rates in the military were lower than in the civilian sector 11/1000 compared to 18/1000 births. The lower rates were attributed to guaranteed access to care, education, and the multiracial population of the military.

Messersmith-Heroman and Heroman (1994) reported no difference in maternal and fetal outcomes among 100 enlisted military women and 100 working military dependents. Both groups reported similar stress levels, but military women worked longer hours and further into their pregnancy. Military women also reported less social support. A shortcoming of this study was that it did not examine occupation specific variables, work experiences, and/or command climate variables.

One explanation for the mixed results is a failure to fully measure the impact of work on delivery outcomes. Existing studies simply divided their samples into working and nonworking women. Differences in work climate and support wee ignored. The work climate rather than the status of working may be a more robust predictor of delivery outcomes.

Delivery outcomes among military personnel must be viewed in the context of differences in socioeconomic factors and health care access when compared to delivery outcomes of the nation as a whole. Military women are healthy; have extremely low frequencies of recreational drug use (Brunader, Brunader & Kugler, 1991; Polzin, Kopleman, Brady & Read, 1991); are employed; most are high school graduates; and medical care is free and accessible. In contrast, military pay is relatively low compared with similar employment in the civilian sector.

Support from coworkers and supervisors, support for pregnancy related work restrictions, and a lack of harassment in the workplace are indicators of the work climate and work experiences for pregnant women. Supervisor support has to do with the degree to which pregnant personnel perceive that their commanders support pregnancy in the work place. An indicator of supervisor support is whether and how the chain of command responds to negative remarks about pregnancy. Support from supervisors is a form of social support and may ameliorate stress and promote healthy delivery outcomes, work effort, and intentions to stay in the organization. Conversely, lack of supervisor support may exacerbate psychological stress and contribute to poor birth outcomes, withdrawal of work effort, and reduced intentions to stay in the organization.

Coworker support has to do with how well pregnant personnel and coworkers get along in the workplace. Indicators of coworker support include the degree to which pregnant personnel are supported by coworkers and included in coworker activities and the absence of negative remarks or resentment about pregnancy. Coworker support, like supervisor support, is a form of social support and may ameliorate stress and promote healthy delivery outcomes, work effort, and intentions to stay in the organization. Conversely, lack of coworker support may exacerbate psychological stress and contribute to poor birth outcomes, withdrawal of work effort, and reduced intentions to stay in the organization. Pregnant personnel may value relationships with coworkers more than supervisors. Withdrawal of support from coworkers due to pregnancy may exacerbate stress and contribute to poor birth outcomes, reduced work effort and intentions to leave the organization.

Pregnancy profile support has to do with pregnancy related work restrictions. Indicators of profile support include honoring profiles without question or harassment, honoring prescribed work rests, supporting work absences due to pregnancy, and supporting absences for medical appointments. Pregnancy profile support or lack thereof is generated from supervisors and coworkers and is related to coworker and supervisor support. When pregnant personnel are hassled about pregnancy related work restrictions, they may violate restrictions or avoid individuals or situations where they are hassled. Pregnancy profile support is a form of social support and may ameliorate stress and promote healthy delivery outcomes, work effort, and

intentions to stay in the organization. Conversely, lack of profile support may exacerbate psychological stress and contribute to poor birth outcomes, withdrawal of work effort, and reduced intentions to stay in the organization.

Work place discrimination and/or harassment is an indicator of the work climate and experiences of pregnant personnel. Indicators of discrimination and/or harassment include incidences of exclusion, racial discrimination, favoritism, sexual harassment, and gender discrimination. Increased incidence or high incidences of discrimination/harassment would indicate a poor work climate that may adversely affect delivery outcomes, work effort, psychological health, and intentions to stay in the organization.

Correnti and Jensen (1989) found agreement between soldier and supervisor perceptions of support in the work place. The major shortcoming of the study was a failure to report the questions used, validity, and reliability. The study was further limited because only 33 pairs were used and because the pairs were limited to junior enlisted soldiers and junior NCOs. It was unclear what the study assessed and how to interpret and use the findings.

Work restrictions differentiate pregnant military women from their coworkers. Supervisors and coworkers may resent that pregnant women receive full pay and benefits, but are exempt from some work and miss work for pregnancy related conditions. The result may be withdrawal of support, negative feelings, reactions, and feedback toward pregnant women which may produce a hostile work climate and adversely affect outcomes. Considering a holistic perspective of health, we hypothesized that medical conditions, psychological health, and work factors would jointly predict delivery outcomes.

Demographic Characteristics

As discussed demographic characteristics of pregnant military women play a complex role in delivery outcomes. Demographics also play a complex role in psychological health, performance and turnover. Specific hypotheses regarding demographics addressed in this study are discussed.

Rank reflects a mixture of demographic characteristics and socioeconomic status. Rank in the military is positively associated with age, tenure, education, marital status, and greater financial status. Higher ranking personnel are entrusted with greater authority and responsibility in the workplace based on a history of successful work performance. Higher ranking personnel have chosen over time and repetitively to remain in the organization. We hypothesized that higher ranking pregnant personnel would perceive better career opportunities, have greater intentions to stay in the organization, would report fewer psychological symptoms, greater work performance, would report a positive work climate; and would be less likely to experience adverse delivery outcomes or leave the organization.

Theoretically, the status of marriage offers a measure of stability and support from partners, family members, and society at large that is less likely to be present for single women who become pregnant. Furthermore, married women are more likely to discuss pregnancy planning with their partners and are more successful in preventing unplanned pregnancies (Forrest, 1994). A spouse may provide financial resources that make it possible for a pregnant woman to quit work. Single pregnant women may provide the only source of income and health benefits for her family and have little choice in maintaining employment. We hypothesized that married women would report fewer psychological symptoms, greater work performance, would report a positive work climate and would be less likely to have adverse delivery outcomes.

A unique characteristic of the military is the requirement for personnel to be world wide deployable at all times. Single parents are required to have a working plan for someone to take immediate care of their children in the event of deployment. Family care plans are difficult because personnel are employed all over the world often times where family and friends are unavailable. Turnover is an outcome of a nonfunctioning family care plan. We hypothesized that single pregnant personnel would be less likely to stay in the organization.

Older women tend to have more life experiences than younger women. Experiences in education, working, and relationships contribute to maturity and responsibility and may foster pregnancy planning. Older pregnant personnel may perceive better career opportunities and intend to stay in the organization. We hypothesized that older personnel would report fewer psychological symptoms, greater work performance, and would report a positive work climate. Advanced maternal age has been associated with adverse delivery outcomes. The cutoff for advanced maternal age is unknown. We hypothesized that women over age 35 would be more likely to have adverse birth outcomes.

Better educated women may have more information regarding the advantages and disadvantages of different career opportunities. Educated women are also more likely to know where to go, how to obtain, and how to successfully use birth control devices to prevent unplanned pregnancies all of which may enhance career opportunities and intentions to stay in the organization. Better educated women may be better prepared to understand and take care of their health while pregnant and to seek appropriate medical and psychosocial care when needed. We hypothesized that better educated women would report fewer psychological symptoms, greater work performance, a more positive work climate, and would be less likely to turnover and experience adverse delivery outcomes.

Ethnicity is associated with a variety of cultural beliefs and values. Ethnicity may differentiate beliefs and practices regarding pregnancy and work. The result may be ethnic differences in perceptions of career opportunities and intentions to stay in the organization. We hypothesized that minority pregnant women would report a greater number of psychological symptoms, would be more likely to turnover and have adverse delivery outcomes.

Career perceptions may change as a function of gestation. Pregnant women experience hormonal changes and appear physically different based on the gestational age of pregnancy. During the first trimester, pregnant women frequently experience morning sickness, but do not appear pregnant. During the second or third trimesters, women appear pregnant and physical coordination can be awkward. Pregnant women may contemplate parenthood and work issues more intensely and differently as pregnancy progresses. Gestation was hypothesized to differentiate perceptions of career opportunities and turnover intentions.

METHOD

Procedures

Questionnaires were administered to active duty obstetrics patients who volunteered at Walter Reed Army Medical Center in Washington D.C., The National Navy Medical Center in Bethesda, Maryland, and Womack Army Medical Center in Fayetteville, North Carolina. Participants were active duty members of the Army, Air Force, Navy, Marine, Coast Guard and other uniformed services. Participants were recruited at the clinics and briefed by a member of the research team about the purpose of the study, confidentiality, and voluntary nature of the study. Participants who were in their first or second trimester of pregnancy during the initial survey were followed up with a second questionnaire during their final trimester of pregnancy.

Delivery outcome data was collected for each participant who delivered at one of the three facilities in the study. Delivery data was transcribed from participant medical records by medical providers at each site and included information such as APGAR scores, baby weight, gender, and fetal and maternal complications.

Delivery outcome data was also abstracted from the Standard Inpatient Data Record (SIDR) electronic database by Patient Administration Systems and Biostatistics Analysis (PASBA). Data included Diagnosis Related Group (DRG) codes, procedure codes, and cost data. Participants without valid social security numbers were excluded.

PASBA abstracted turnover data from the Defense Enrollment and Eligibility Record System (DEERS) by participant social security number approximately six months after delivery.

Measures

A complete list of questionnaire items and response categories is listed in Appendix A. Reliability estimates, means, and standard deviations for summary measures are provided in Tables 40 and 41. Detailed confirmatory factor analyses results documenting the reliability, validity, and factor structure of summary measures were provided in Evans and Rosen (1996).

Demographic variables. Participants provided information about a wide range of demographic variables: race, rank, marital status, branch of service, tenure, spouse active duty status, spouse race, education, military occupational specialty, and housing.

Medical Conditions. Participants were provided a list of 18 different medical conditions, developed in coordination with the Chief of Obstetrics at one of the facilities, and were asked to check all that apply. Examples of medical conditions included: premature contractions, diabetes, high blood pressure, vaginal bleeding, and toxemia. Participants were asked to specify any additional medical conditions not listed. Number and severity of medical conditions were positively associated. Due to the infrequency of any particular medical condition and the relatively small sample size, analyses of particular maternal medical conditions were not reasonable. Considering further consultation, reported medical conditions were added together to form a summary score. Because very few participants reported more than four medical conditions, scores greater than four were recoded as four. Participants were asked to complete the checklist for prior pregnancies, the current pregnancy at time one, and the current pregnancy at time two.

Work experiences/climate. Coworker support, command support, pregnancy medical profile support and harassment were four different measures of work climate and experiences. Work Climate and Experiences items were developed for this study. The items relate to the

experiences a pregnant service member may encounter at work with her commander and coworkers while pregnant. The rating scale for the first three measures has five points with one indicating strongly disagree and five indicating strongly agree. The rating scale for the harassment measure has five points with one for always and five for never. Items from each measure were averaged to form separate summary scores. Participants were queried about their work experiences in the initial and follow-up surveys.

Coworker Support was a six item measure assessing how well the pregnant woman and her coworkers get along, if coworkers are supportive and include the pregnant women in activities, whether coworkers make negative pregnancy remarks, cohesion of the work group, and whether coworkers are resentful of missed work due to pregnancy. Command Support has a three-item scale assessing whether the commander is supportive of the pregnancy, responds to negative pregnancy remarks, and whether the work climate is positive. Pregnancy Medical Profile Support was a four-item measure assessing whether medical conditions that restrict work are honored without question or harassment. Harassment-discrimination was a five-item measure assessing incidences of exclusion, racial discrimination, favoritism, sexual harassment, and gender discrimination in the work place. The scale was validated as a part of a program of study on stress and cohesion on over 100,000 subjects (Vaitkus & Griffith, 1990).

Detailed assessment of the psychometric properties of the scales was reported in Evans and Rosen (1996). Reliability estimates ranged from .84 to.88 and factor analytic results supported a four-factor model (Evans & Rosen, 1996). A higher-order factor analysis supported a second order factor with Command Support, Coworker Support, and Pregnancy Support as the three first-order factors. The Harassment-discrimination factor did not fit in the higher order factor model. A more detailed discussion is provided in the Summary Measures Chapter of this report.

Transition Difficulty Scale. The Transition Difficulty Scale was developed and validated by Rich (1993). Coefficient alpha ranged from .97 to .98. The scale is an alternate measure of stress associated with the transition of pregnancy. Participants were queried in the initial and follow-up surveys. As reported in Evans and Rosen (1996) in contradiction to Rich's (1993) research, a two-factor model of Transition Difficulty best fit the data. The two factors were renamed Work Transition Difficulty and Spouse Transition Difficulty. The two factors did not fit into a higher order factor model and should not be combined.

Psychological Well-Being. The Brief Symptom Inventory (BSI) was a 49 item self report psychological symptom inventory developed from a larger scale, the SCL-90-R (Derogatis, Lipman, Rickels, Uhlenhuth & Covi, 1974). Psychometric evaluation has shown the BSI to be an acceptable short form (Derogatis & Melisaratos, 1983). It's nine subscales are somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. A global index calculated from the BSI is the General Severity Index (GSI) which is based on the sum of the ratings the subject has assigned to each symptom. Reliability coefficients range from .75 to .89 (Derogatis & Melisaratos, 1983). Participants completed the checklist of symptoms in the initial and follow-up surveys.

Coping. Participants were asked how helpful the following sources were in helping cope with pregnancy and stress: family members, unit members, friends, professional therapists, chaplains,/ministers/clergy, doctor, community services, and family support group. Sources of support were examined individually and as a factor. Confirmatory factor analysis results supported a single factor solution with four items: family members, unit members, friends, and

doctor. Professional therapists, chaplains, community services, and family support group did not load on the factor. The reliability estimate was .70. Alternatively, each source of coping was assessed separately.

Work reassignment. The frequency of work reassignment, reasons for work reassignment, and whether the reassignment was necessary and/or meaningful were assessed by asking participants to respond yes (1) or no (2) to the following questions: Were you reassigned to a different job by your commander because you were pregnant?; Were you reassigned because of exposure to hazardous materials?; Were you reassigned because of physical requirements?

Reassigned participants were asked to rate the necessity of the work reassignment, and also whether the new work was meaningful, using a scale of 1 (strongly disagree) to 5 (strongly agree). If reassigned, participants were asked to rate on a scale of 1 (very negatively) to 5 (very positively), how do you think your performance evaluations will be affected because of your reassignment, and how do you think your chances for promotion will be affected because of your work reassignment. Participants were queried in the initial and follow-up surveys.

Health behaviors. Participants were asked to respond yes, no, or never used to the questions: Since you found out you were pregnant have you reduced your use of a) alcohol, b) cigarettes, and c) caffeine? Participants were queried in the initial and follow-up surveys.

Delivery Outcomes. Diagnosis Related Groups (DRG) codes from the Standard Inpatient Data Record (SIDR) database were the measures of maternal and infant delivery outcomes (PASBA, 1997). The majority of complications were preterm delivery and low birth weight (86%). Examples of other complications included tubal defects and gastrointestinal problems. DRGs without complications were coded as one. DRGs with complications were coded as two.

Delivery log outcome data (for mothers and babies) transcribed by medical personnel at each facility was collected for the initial sample of 350 participants. Delivery log data included a wide range of variables, e.g., APGAR scores at one and five minutes, baby weight and gender, baby complications, and maternal medical conditions and delivery complications. The delivery log instrument is listed in Appendix A.

Turnover. Actual turnover data was abstracted by social security number from the Defense Eligibility and Enrollment Recording System (DEERS) approximately six months after delivery. Deers data indicated whether the participant was still on active duty, left active duty or retired.

RESULTS

Because of the complexity of the findings, results were divided into topics. The topics were progressive, such that findings in the first sections were added to or further developed in later sections. The final chapters on turnover and delivery outcomes were comprehensive. Topics included: Demographic comparisons, summary measures, longitudinal changes, medical history, coping and social support, work reassignment, military career opportunities, absences, turnover, and delivery outcomes. A brief overview of findings is presented for each category followed by a detailed series of descriptive and inferential statistical results. An index of tables follows each overview.

DEMOGRAPHIC COMPARISONS

filenames:
DEMOS.PRS
SAMPLE.PRS

DEMOGRAPHIC COMPARISONS

Time 1 vs Time 2 vs Nonrespondents	Table #	Page #
a. SURVEY SAMPLES	1	24
b. SAMPLE DATA	2	25
c. DEMOGRAPHIC VARIABLES LIST	3	25
d. MILITARY PAY GROUP		
NUMBER	4	25
PERCENT	5	25
e. MILITARY PAY GRADE		
NUMBER	6	25
PERSENT	7	25
f. AGE GROUP (18-26/18-30/18/35 yrs)		
NUMBER	8	26
PERCENT	9	26
g. AGE GROUP (Quartiles)		
NUMBER	10	26
PERCENT	11	26
h. TENURE		
NUMBER	12	26
PERCENT	13	26
i. MARITAL STATUS		
NUMBER	14	27
PERCENT	15	27
j. BRANCH OF SERVICE (Federal Services)		
NUMBER	16	27
PERCENT	17	27
k. ACTIVE DUTY (AD) STATUS OF SPOUSE		
NUMBER	18	27
PERCENT	19	27
l. ETHNICITY		
NUMBER	20	28
PERCENT	21	28
m. ETHNICITY OF SPOUSE		
NUMBER	22	28
PERCENT	23	28
n. EDUCATION (Highest Level)		
NUMBER	24	28
PERCENT	25	28
o. HOUSING ARRANGEMENT		
NUMBER	26	29
PERCENT	27	29
p. *MY PREGNANCY WAS PLANNED*		
NUMBER	28	29
PERCENT	29	29

Time 1 vs Time 2 vs Nonrespondents (Continuation)	Table #	Page #
q. *MY PREGNANCY HAPPENED IN THE TIME FRAME I PLANNED*		
NUMBER	30	29
PERCENT	31	29
r. IS THERE A GOOD TIME, IN A MILITARY CAREER.		
TO BECOME PREGNANT?		
NUMBER	32	30
PERCENT	33	30
s. WHERE ARE YOU RECEIVING MATERNITY CARE?		
NUMBER	34	30
PERCENT	35	30
t. PARITY		
NUMBER	36	30
PERCENT	37	30

DEMOGRAPHIC COMPARISONS

Participant Response Rates

Participants were 350 pregnant active duty military women recruited from three different military medical centers. The response rate for the initial survey was 50%. Participants who were in their first or second term of pregnancy during the initial survey received a second survey in their third trimester (n=189). The response rate for the second survey was 54% (n=102). See Table 1 for descriptive information.

Delivery outcome data transcribed by medical personnel at each facility was collected for the initial sample of 350 participants. The response rate was 81% (n=283). Delivery log data included a wide range of variables, i.e., APGAR scores at one and five minutes, baby weight, gender, baby complications, maternal complications. The delivery log instrument is listed in Appendix A. Participants who did not have valid social security numbers, moved, retired, left active duty or did not deliver in one of the study sites were missing from the data set.

Delivery outcome data from the Standard Inpatient Data Record (SIDR) electronic database was extracted by Patient Administration Systems and Biostatistics Analysis (1997) and was used in conjunction with the delivery log data. The SIDR database provided Diagnosis Related Group (DRG) codes, procedure codes, and cost data. The response rate was 83% (n=289) for mothers and 77% (n=270) for babies. Further discussion is provided in the delivery outcome chapter of this report.

Actual turnover data was abstracted by social security number from the Defense Eligibility and Enrollment Record System (DEERS) approximately six months after delivery. The response rate was 99%. Participants without valid social security numbers were missing from the data set. Further discussion is provided in the turnover chapter of this report.

Descriptive Characteristics of Active Duty Women

The Defense Manpower Data Center (DMDC) provided demographic characteristics of active duty women. Active military female strength in fiscal year 1995 was 191,400 that represented approximately 14% of the total active force. Thirty-five percent of the women were in the Army; 33% in the Air Force; 27% in the Navy and 4% in the Marines. Fourteen percent of the women were officers. Fifty-seven percent of the women were married. Thirty percent of the total force were minorities; 14.4% of the officers and 33.4% of the enlisted force. Forty-one percent of the women were minorities; 21.4% female officers and 44.9% female enlisted. The average age of females was 28 years (DMDC, 1996).

Descriptive Characteristics of Active Duty Pregnant Women

The absence of a centralized database regarding the demographic characteristics of pregnant active duty personnel created some difficulty. The Patient Administration Systems and Biostatistics Analysis (PASBA) provided the demographic characteristics of active duty pregnant women through analysis of the Standard Inpatient Data Record (SIDR) database. ICD-9-CM codes and active duty prefix codes were used to select active duty pregnant women from the SIDR database. Active duty women who were authorized to deliver in non military facilities were included in the database. Personnel who left active duty or who had private insurance and delivered in non military facilities were not included in the database.

There was a total of 13,356 active duty births in 1995. Forty percent were Army deliveries; 29% were Air Force; 26% were Navy; 4% were Marines; and 1% were other uniformed services personnel. Officers delivered 11% of the total births. Sixty-eight percent of the mothers were married. Forty-one percent of the births were to minorities. The average maternal age was 25 years (PASBA, 1997).

The female active duty population and pregnant population were similar in terms of branch of service, rank, minority status, and age. Active duty pregnant women were more likely to be married.

Sample of Active Duty Pregnant Women

Participants in the study were 350 pregnant active duty military women recruited from three different military medical centers. Subjects were approached by research assistants when they visited the obstetric clinics. The purpose of the study was explained and those who agreed to participate provided informed consent. Twenty-two percent of the participants were in their first trimester of pregnancy, 32% were in their second trimester, and 46% were in their third trimester. Forty-two percent were experiencing their first pregnancy. Descriptive information is provided in Tables 2-37.

Of the 350 participants, 57% were Army personnel; 25% were Navy; 12% were Air Force; 3% were Marines; and 3% were other uniformed personnel. Twenty-five percent of the participants were officers. Seventy-six percent of the participants were married. Thirty-six percent of the participants were minorities. The mean age was 27 with a range of 18 to 41 years.

The sample was fairly similar to both the active duty and pregnant active duty populations in terms of minority status and age. The sample differed from the pregnant active duty population in terms of branch of service, rank, and marital status.

Study participants were more likely to be in the Army and less likely to be in the Air Force. The difference in service branch participation was not surprising given that the study sites were Army and Navy facilities. The question is whether results can be generalized given the differences in branch of service participation rates. If you make the assumption that military service is similar across service branches, then the results are generalizable. If you make the assumption that there are significant service branch differences, then there may be some question about generalizability. Because of the difference in participation rates, potential service specific differences were examined in applicable research hypotheses.

Study participants were more likely to be married than the pregnant active duty population. Single personnel may have been reluctant to participate or they may not have been available to participate because they were not seeking obstetric care. Some caution is warranted when generalizing results from the study, because unmarried pregnant personnel were somewhat under represented in the sample.

Study participants were more likely to be officers. Marital status and rank are associated. Pregnant officers were more likely to be married than pregnant enlisted personnel. Ninety-eight percent of the officers were married compared to 69% of the enlisted personnel. Because enlisted personnel were somewhat under represented in the sample, some caution is warranted when generalizing results from the study. Enhanced efforts to recruit single and enlisted participants are needed in future research.

Descriptive Characteristics of the Follow-up Sample

Demographic characteristics of the initial sample of participants in their first or second term of pregnancy (n=189) were compared with the follow-up sample (n=102). This comparison was completed because only participants in their first or second term of pregnancy were eligible for the follow-up survey. Characteristics of the follow-up sample were also compared to eligible nonrespondents (n=87). Descriptive information about demographic comparisons is presented in Tables 2-37.

There were 102 participants who completed both the initial and follow-up survey. The demographic characteristics of the follow-up group were similar to the initial sample in terms of age, marital status, ethnicity, education, branch of service, and housing. Follow-up participants were more likely to be officers.

Sixty percent of the follow-up participants were Army personnel compared to 62% of the first and second term sample and 57% of the total initial sample. Twenty-four percent of the follow-up sample were Navy personnel compared to 24% in the first and second term sample and 25% in the total initial sample. Eleven percent of the follow-up sample were Air Force personnel compared to 10% in the first and second term sample and 12% in the total initial sample. Three percent of each of the samples were Marines. Two percent of the follow-up sample were other uniformed services personnel compared to three percent of the first and second term sample and total initial sample.

Thirty percent of the follow-up group were officers compared to 24% of the first and second term sample (n=189) and 25% of the total initial sample (n=350). Seventy-eight percent of the follow-up sample were married compared to 75% of the first and second term sample and 76% of the total initial sample. Sixty-two percent of the follow-up sample were White compared to 58% of the first and second term sample and 63% of the total initial sample. The average age of the follow-up sample, first and second term sample, and total initial sample groups was 27 years.

Forty-two percent of the follow-up sample received maternity care at Womack compared to 42% of the first and second term sample and 40% of the total initial sample. Twenty-two percent of the follow-up sample received maternity care at WRAMC compared to 24% of the first and second term sample and 22% of the total initial sample. Thirty-six percent of the follow-up sample received maternity care at NNMC compared to 35% of the first and second term sample and 38% of the total initial sample.

A major change in delivery of services took place during the data collection for this study. WRAMC and NNMC merged their OB/GYN services. WRAMC continued to offer routine prenatal care, but all complicated pregnancies and deliveries were cared for at NNMC. Although patients received care at NNMC, some were seen by WRAMC providers. These participants may have perceived they were receiving care from WRAMC if that's where they began care and/or if their provider was Army and/or from WRAMC. Participants at WOMACK were similarly affected. WRAMC was the tertiary care facility for complicated pregnancies and deliveries. WOMACK participants were referred to NNMC after the merger, but may have been treated by WRAMC providers.

Sixty-two percent of the follow-up participants had 1-5 years of tenure compared to 59% of the first and second term sample and 58% of the total initial sample. Forty-nine percent of the follow-up sample had some college compared to 47% of the first and second term sample and 45% of the total initial sample. Forty-one percent of the follow-up sample owned their own

homes compared to 41% of the first and second term sample and 38% of the total initial sample. Fifty-six percent of the follow-up sample had active duty spouses compared to 53% of the first and second term sample and total initial sample.

Fifty-nine percent of the follow-up sample planned their pregnancies compared to 55% of the first and second term sample and 55% of the total initial sample. Forty-seven percent of the follow-up participants reported that their pregnancy occurred in the time frame planned compared to 46% in the first and second term sample and 45% in the total initial sample. Fifty-two percent of the follow-up sample believed that there was a good time in a military career to become pregnant compared to 48% of the first and second term sample and 44% of the total initial sample.

Descriptive Characteristics of Follow-up Nonrespondents

Demographic characteristics of the follow-up participants (n=102) were compared to follow-up nonrespondents. Follow-up nonrespondents were participants in their first or second trimester of pregnancy during the initial survey who did not complete a second survey. There were 87 eligible participants who did not complete the follow-up survey.

Sixty percent of the follow-up sample were Army personnel compared to 63% of the nonrespondents. Twenty-four percent of the follow-up sample were Navy personnel compared to 25% of the nonrespondents. Eleven percent of the follow-up sample were Air Force personnel compared to 8% of the nonrespondents. Three percent of the follow-up sample and nonrespondents were Marine personnel. Two percent of the follow-up sample and nonrespondents were other uniformed services personnel.

Thirty percent of the follow-up sample were officers compared to 18% of the nonrespondents. Seventy-eight percent of the follow-up sample were married compared to 71% of the nonrespondents. Sixty-two percent of the follow-up sample were White compared to 58% of the nonrespondents. The average age of the follow-up and nonrespondent samples was 27 years.

Twenty-two percent of the follow-up sample received care at WRAMC compared to 27% of the nonrespondents. Forty-two percent of the follow-up sample received care at NNMC compared to 35% of the nonrespondents. Thirty-six percent of the follow-up sample received care at Womack AMC compared to 38% of the nonrespondents.

Sixty-two percent of the follow-up sample had 1-5 year's tenure compared to 55% of the nonrespondents. Forty-nine percent of the follow-up sample completed some college compared to 43% of the nonrespondents. Forty percent of the follow-up sample and nonrespondents owned their own homes. Fifty-six percent of the follow-up sample had active duty spouses compared to 50% of the nonrespondents.

Fifty-nine percent of the follow-up sample planned their pregnancies compared to 52% of the nonrespondents. Forty-seven percent of the follow-up sample had their pregnancy occur in the time frame planned compared to 49% of the nonrespondents. Fifty-two percent of the follow-up sample believed that there was a good time in a military career to become pregnant compared to 47% of the nonrespondents.

Nonrespondents did not significantly differ from the follow-up sample in terms of age, ethnicity, housing, or branch of service. Nonrespondents were less likely to be married, less likely to have an active duty spouse, were more likely enlisted personnel, and had shorter tenure. Enhanced efforts to recruit single and enlisted participants are needed in future research.

Survey Samples

Total initial survey	100 %	N=350
1st & 2nd term	54 %	n=189
3rd term	46 %	n=161
Follow-up survey	54 % *	n=102
Nonrespondents	46 % *	n= 87

* percent of 1st & 2nd term (n=189)

NOTE: 9 surveys were not included in the Follow-up Sample because 3rd term participants were not eligible.

Table 1

Sample Data

Time 1 (n = 189)
vs
Time 2 (n = 102)
vs
Nonrespondents (n = 87)

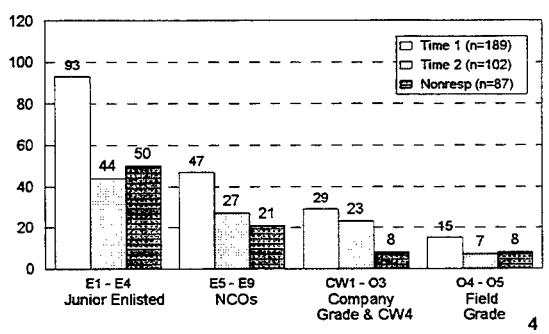
2

DEMOGRAPHIC VARIABLES

- Military Pay Grade
- Age Group
- Tenure
- Marital Status
- Branch of Service
- Active Duty Status of Spouse
- Ethnicity
- Ethnicity of Spouse
- Education
- Housing Arrangement
- Pregnancy Planning
- Pregnancy Timing
- Pregnancy During Military Career
- Where Receiving Maternity Care

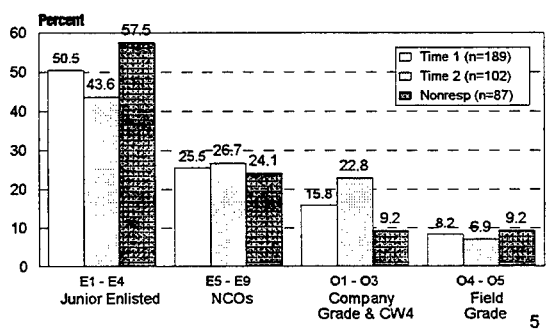
3

Military Pay Group



4

Military Pay Group



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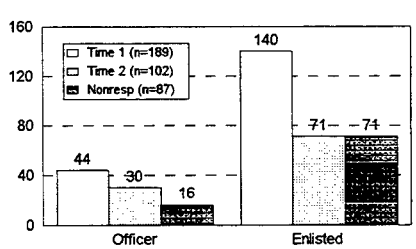
Military Pay Grade



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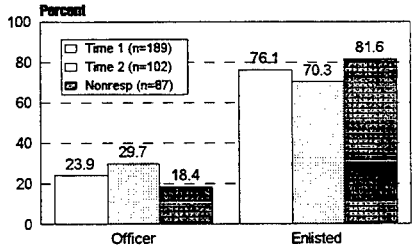
Military Pay Grade



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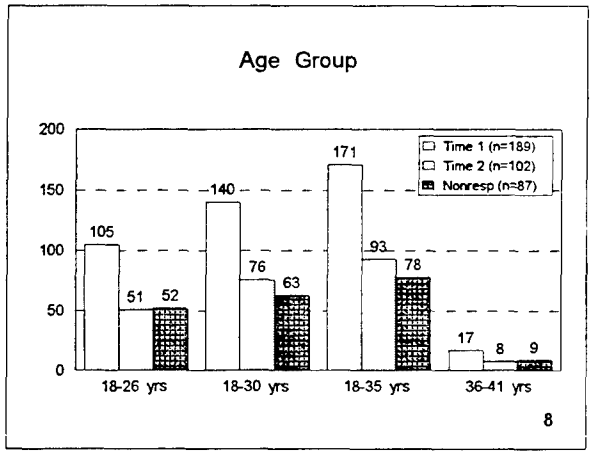
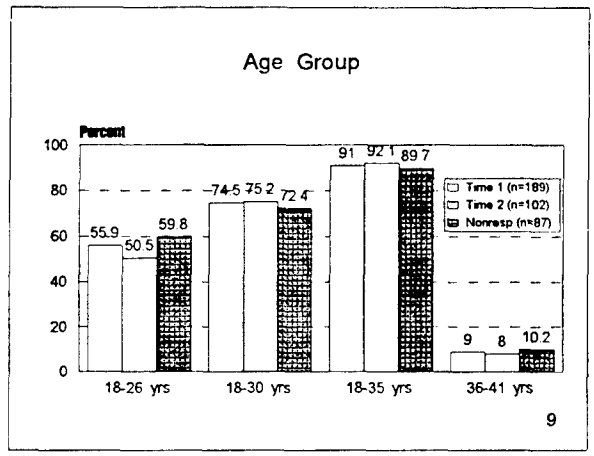
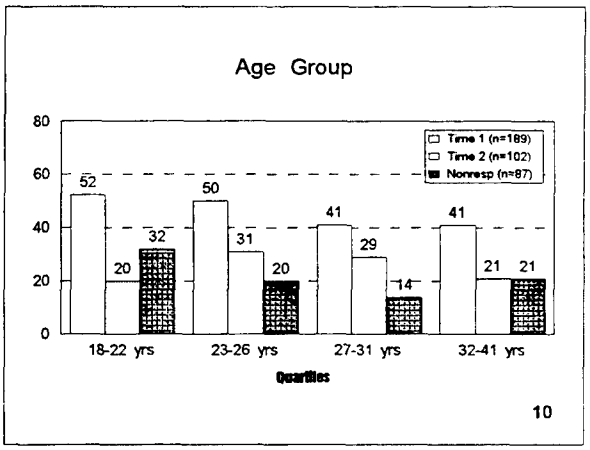
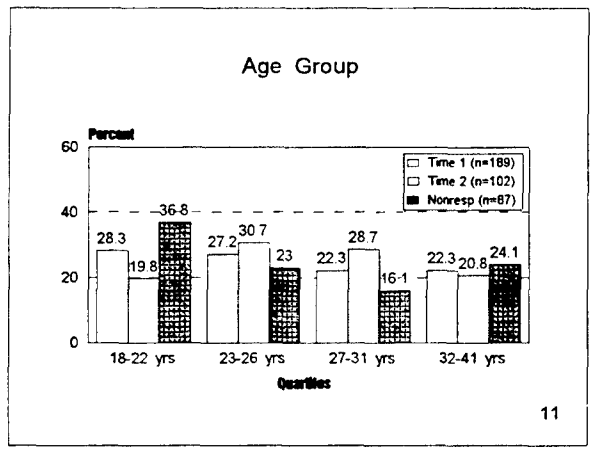
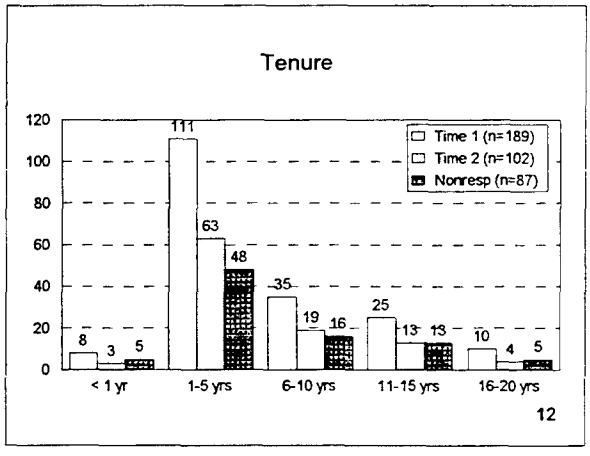
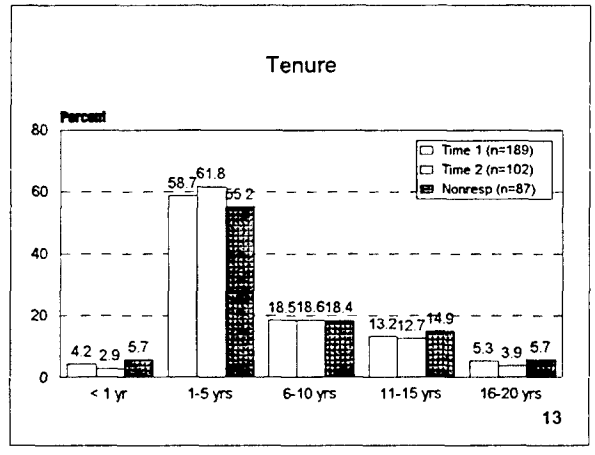

Age Group
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
200
150
100
50
0
105
51
52
140
76
63
171
93
78
17
8
9
18-26 yrs
18-30 yrs
18-35 yrs
36-41 yrs
8

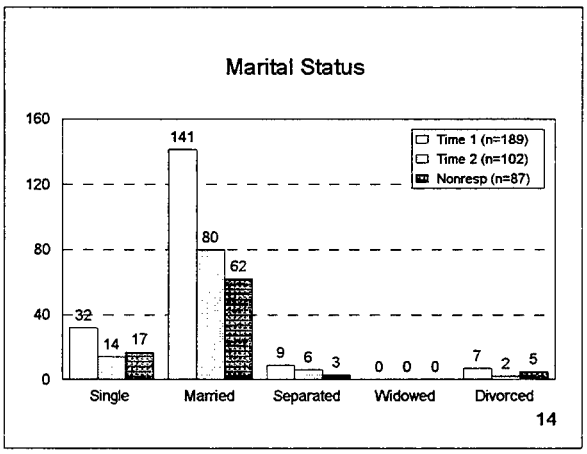

Age Group
Percent
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
100
80
60
40
20
0
55.9
50.5
59.8
74.5
75.2
72.4
91
92.1
89.7
9
8
10.2
18-26 yrs
18-30 yrs
18-35 yrs
36-41 yrs
9

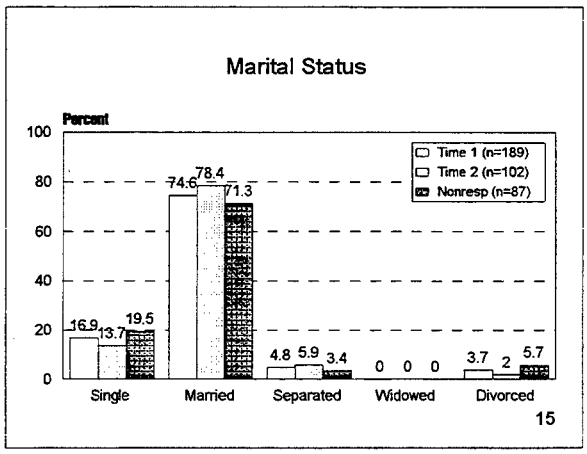

Age Group
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
80
60
40
20
0
52
20
32
50
31
20
41
29
14
41
21
21
18-22 yrs
23-26 yrs
27-31 yrs
32-41 yrs
Quartiles
10

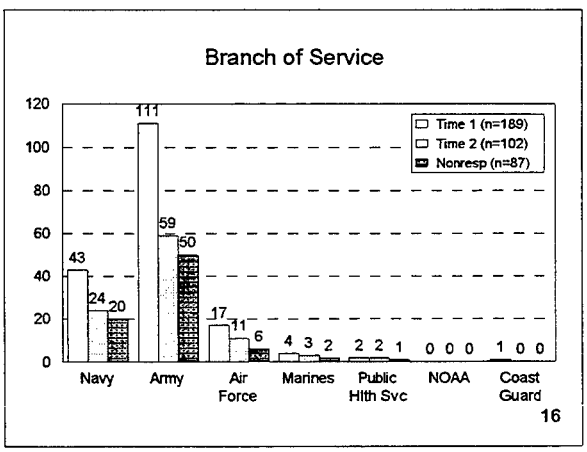

Age Group
Percent
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
60
40
20
0
28.3
19.8
36.8
27.2
30.7
23
22.3
28.7
16.1
22.3
20.8
24.1
18-22 yrs
23-26 yrs
27-31 yrs
32-41 yrs
Quartiles
11

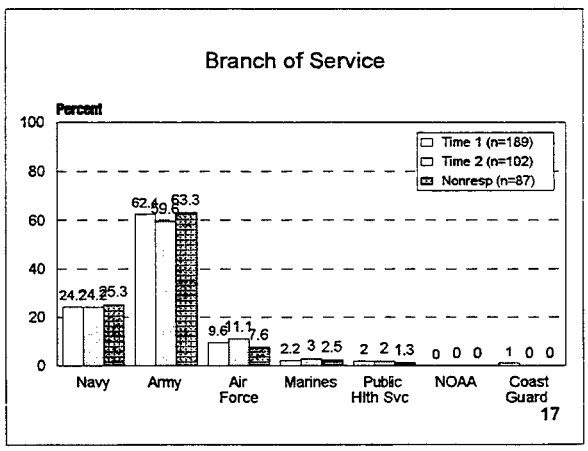

Tenure
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
120
100
80
60
40
20
0
8
3
5
111
63
48
35
19
16
25
13
13
10
4
5
< 1 yr
1-5 yrs
6-10 yrs
11-15 yrs
16-20 yrs
12

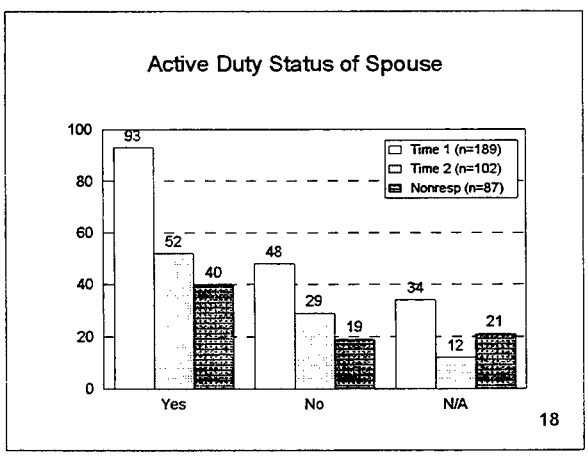

Tenure
Percent
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
80
60
40
20
0
4.2
2.9
5.7
58.7
61.8
55.2
18.5
18.6
18.4
13.2
12.7
14.9
5.3
3.9
5.7
< 1 yr
1-5 yrs
6-10 yrs
11-15 yrs
16-20 yrs
13

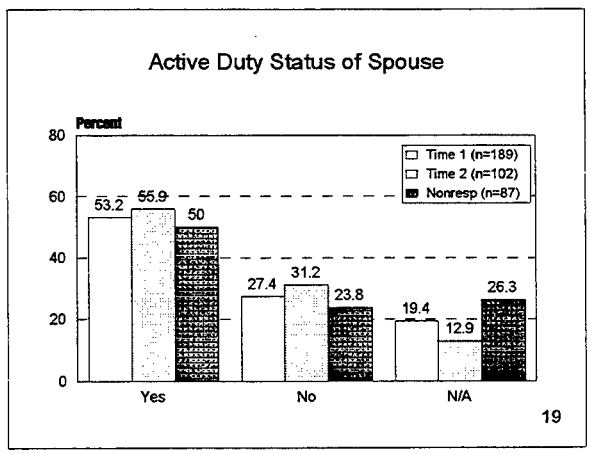

Marital Status
160
120
80
40
0
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
32 14 17
141 80 62
9 6 3
0 0 0
7 2 5
Single
Married
Separated
Widowed
Divorced
14


Marital Status
Percent
100
80
60
40
20
0
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
16.9 13.7 19.5
74.6 78.4 71.3
4.8 5.9 3.4
0 0 0
3.7 2 5.7
Single
Married
Separated
Widowed
Divorced
15

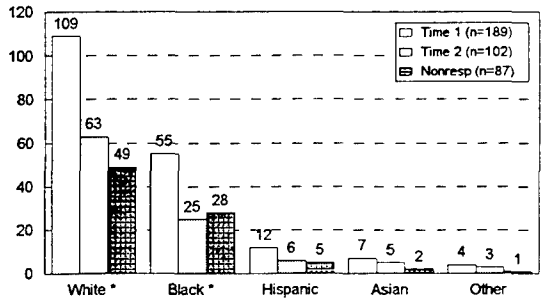

Branch of Service
120
100
80
60
40
20
0
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
43 24 20
111 59 50
17 11 6
4 3 2
2 2 1
0 0 0
1 0 0
Navy
Army
Air Force
Marines
Public Hlth Svc
NOAA
Coast Guard
16


Branch of Service
Percent
100
80
60
40
20
0
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
24.2 24.2 25.3
62.4 59 63.3
9.6 11.1 7.6
2.2 3 2.5
2 2 1.3
0 0 0
1 0 0
Navy
Army
Air Force
Marines
Public Hlth Svc
NOAA
Coast Guard
17


Active Duty Status of Spouse
100
80
60
40
20
0
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
93 52 40
48 29 19
34 12 21
Yes
No
N/A
18


Active Duty Status of Spouse
Percent
80
60
40
20
0
Time 1 (n=189)
Time 2 (n=102)
Nonresp (n=87)
53.2 55.9 50
27.4 31.2 23.8
19.4 12.9 26.3
Yes
No
N/A
19

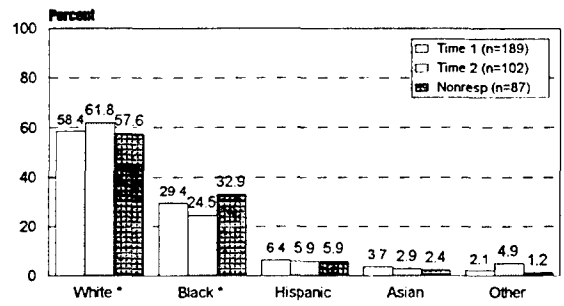
Ethnicity



* non-hispanic

20

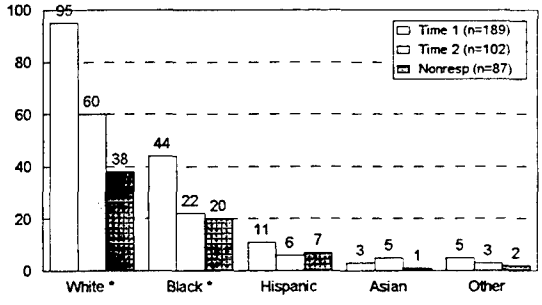
Ethnicity



* non-hispanic

21

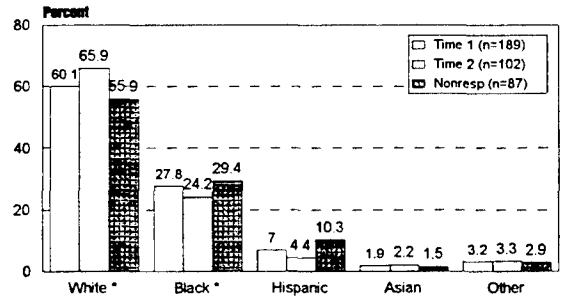
Ethnicity of Spouse



* non-hispanic

22

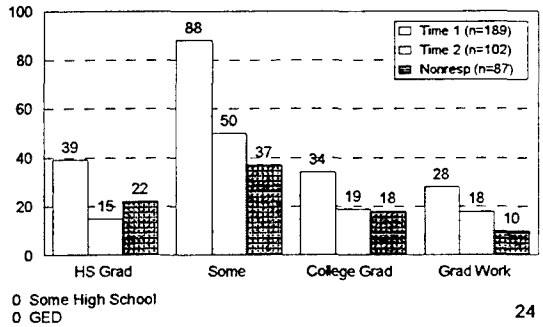
Ethnicity of Spouse



* non-hispanic

23

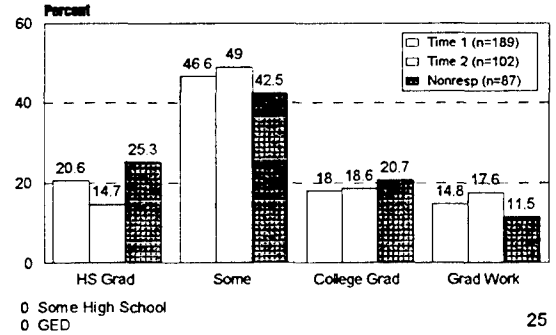
Education (Highest Level)



0 Some High School
0 GED

24

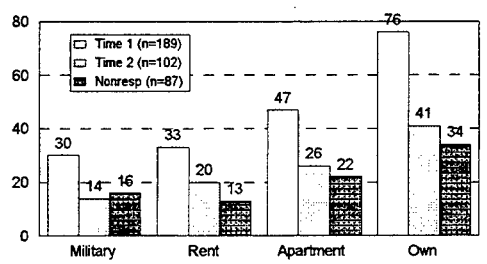
Education (Highest Level)



0 Some High School
0 GED

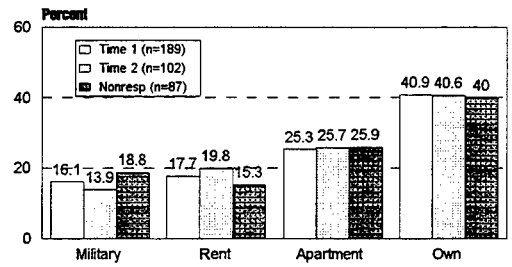
25

Housing Arrangement



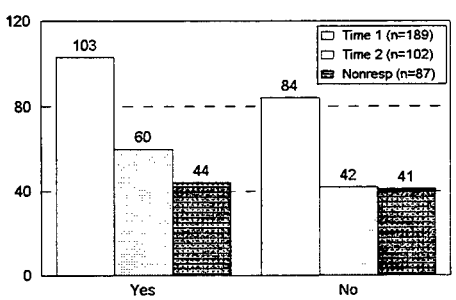
26

Housing Arrangement



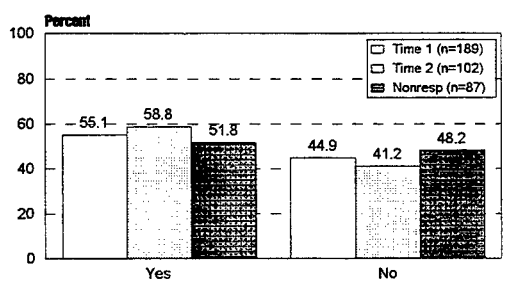
27

"My pregnancy was planned"



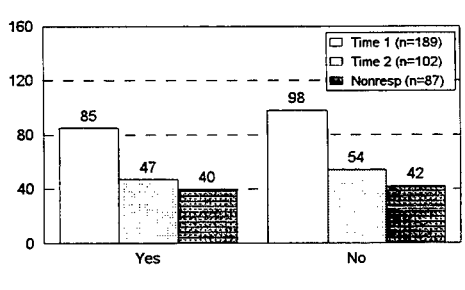
28

"My pregnancy was planned"



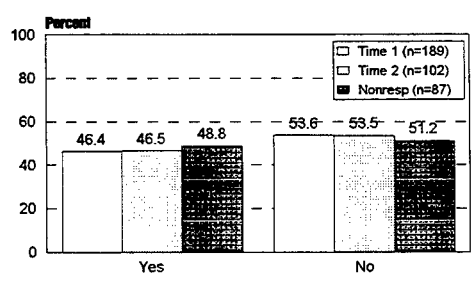
29

"My pregnancy happened in the time frame I planned"



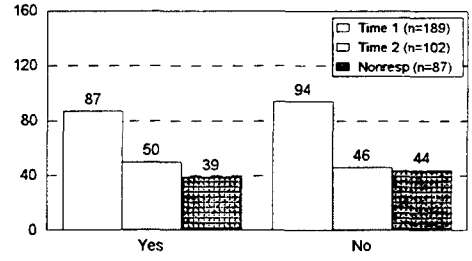
30

"My pregnancy happened in the time frame I planned"



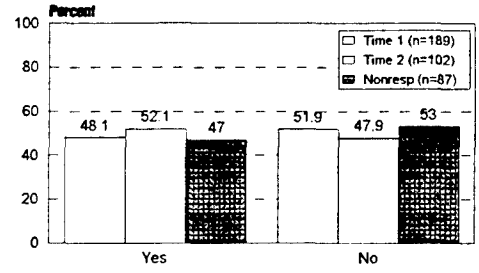
31

Is there a good time, in a military career, to become pregnant?



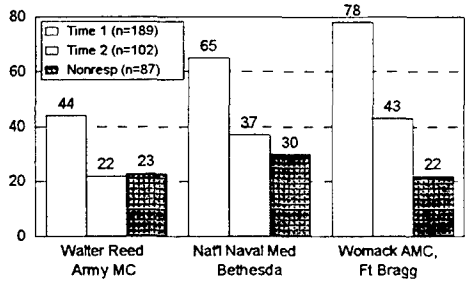
32

Is there a good time, in a military career, to become pregnant?



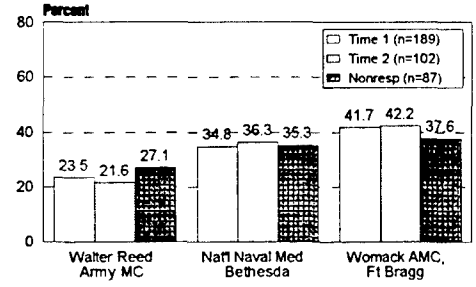
33

"Where are you receiving maternity care?"



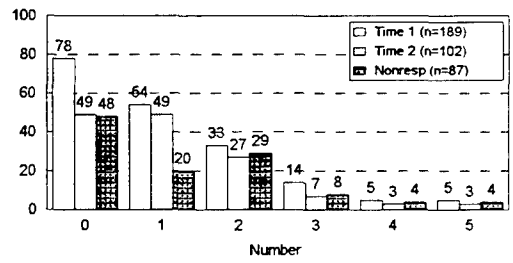
34

"Where are you receiving maternity care?"



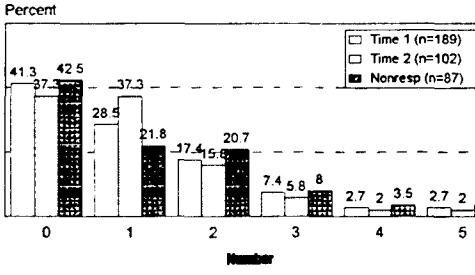
35

Parity



36

Parity



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SUMMARY MEASURES

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Phase1_2.PRS
Matrix1_2.PRS

SUMMARY MEASURES

Summary Measures	Table #	Page #
a. TIME 1 VS TIME 2 (n=102)	38	34
b. SUMMARY MEASURES LIST	39	34
c. SAMPLE ESTIMATES	40	34
d. PHASE 2 (MEAN/S.D.)	41	34
e. CORRELATION MATRIX - TIME 1	42	35
f. CORRELATION MATRIX - TIME 2	43	36

SUMMARY MEASURES

Multiple items from existing or proposed measures were averaged to form summary scores. The validity and reliability of summary measures were reported in the Methods section of this report and the previous Phase I report by Evans and Rosen (1996). The validity and reliability of proposed summary measures were evaluated using covariance structural modeling techniques (Evans & Rosen, 1996).

Confirmatory factor analysis was the measurement model procedure within covariance structural modeling that was used to assess the validity and reliability of proposed measures. Constructs, called latent variables, were operationalized as first order factors with each item loading on a single factor. More global constructs such as work climate were operationalized as second-order factors. The relationship among the constructs was investigated with the two-step approach advocated by Anderson and Gerbing (1988). The observed covariance matrix was compared to the estimated covariance matrix. A Chi-square fit and incremental fit of the model were estimated. A non significant Chi-square test and incremental fit indices in excess of 0.90 indicated a good fit of the model with the data (Bollen, 1989). Residuals, squared multiple correlations, and t-tests were also used to evaluate the fit of measurement models.

The confirmatory factor analysis results reported in Evans and Rosen (1996) supported single factor solutions for command support, pregnancy profile support, coworker support, discrimination-harassment, and performance. A second-order factor, called work climate, was supported with the first-order factors of command support, pregnancy profile support, and coworker support. The first-order factor harassment-discrimination did not fit in the second-order factor model.

Contrary to Rich's (1993) research, a two-factor model of Transition Difficulty best fit the data. The two factors were renamed Work Transition Difficulty and Spouse Transition Difficulty. The two factors did not fit into a higher order factor model.

The subscales and summary scales for the BSI (Deragotis, et al., 1975) were evaluated with confirmatory factor analysis and were not supported. The summary measures and subscales of the BSI were used as validated in previous research.

Reliability estimates, means, and standard deviations for each summary measure were calculated for the follow-up sample (n=102) and are provided in Tables 40 and 41. A comparison of the initial and follow-up sample estimates is provided in Table 40. Correlation matrices are provided for time one (Table 42) and time two data (Table 43).

Time 1
vs
Time 2
(n=102)

38

Summary Measures

Pregnancy Profile Support
Command Support
Coworker Support
Harassment/Discrimination
Transition - Spouse
Transition - Work
Coping
BSI Subscales + Summary Scales
Climate

39

	ITEMS	Time 1 (n=350) ALPHA	Time 2 (n=102) ALPHA
Pregnancy Profile Support	4	.86	.94
Command Support	3	.85	.89
Coworker Support	6	.88	.89
Harassment/Discrimination	5	.84	.82
Transition - Spouse	5	.91	.94
Transition - Work	3	.79	.80
Coping	4	.70	.65
Obsessive-Compulsive	6	.88	.89
Interpersonal Sensitivity	4	.80	.86
Depression	6	.86	.89
Anxiety	6	.81	.87
Hostility	5	.83	.89
Phobic Anxiety	5	.73	.69
Paranoid Ideation	5	.83	.81
Psychoticism	5	.71	.81
Somatization	7	.78	.86
General Severity Inventory	53	.96	.98
Climate	18	.94	.94

40

Phase II

	MEAN	SD
Pregnancy Profile Support	3.65	1.16
Command Support	3.87	0.92
Coworker Support	3.70	0.83
Harassment/Discrimination	4.51	0.66
Transition - Spouse	4.07	0.97
Transition - Work	3.02	1.08
Coping	3.84	0.73
General Severity Inventory	0.55	0.63
Climate	3.90	0.76

41

Correlation Matrix - Time 1
N = 350

Continuous Variables

	PREG SUP	COM SUP	CO WORKR	HARASS /DISCR	TRANS SPOUSE	TRANS WORK	COPING	GSI	GRADE	AGE	TENURE	EDUC	PARITY
PREGSUP	1.00												
COMSUP	0.70 *	1.00											
COWOKR	0.66 *	0.64 *	1.00										
HARASS	0.48 *	0.43 *	0.50 *	1.00									
TRANS-SP	0.07	0.09	0.04	0.11 *	1.00								
TRANS-WK	0.12 *	0.11 *	0.17 *	0.20 *	0.37 *	1.00							
COPING	0.36 *	0.40 *	0.43 *	0.25 *	0.09	0.17 *	1.00						
GSI	0.37 *	0.39 *	0.43 *	0.35 *	0.17 *	0.31 *	0.24 *	1.00					
GRADE	0.32 *	0.31 *	0.35 *	0.19 *	0.03	0.11 *	0.10	0.36 *	1.00				
AGE	0.33 *	0.29 *	0.34 *	0.20 *	0.01	0.22 *	0.09	0.40 *	0.65 *	1.00			
TENURE	0.28 *	0.25 *	0.26 *	0.19 *	0.04	0.24 *	0.13 *	0.28 *	0.39 *	0.77 *	1.00		
EDUC	0.27 *	0.23 *	0.25 *	0.11 *	0.02	0.08	0.06	0.35 *	0.79 *	0.66 *	0.34 *	1.00	
PARITY	0.09	0.04	0.05	0.03	0.09	0.14	0.01	0.09	0.04	0.15	0.13	0.08	1.00

Table 42

Note: * p > .05 Negative value

Correlation Matrix - Time 2
n = 102

Continuous Variables

	PREG SUP	COM SUP	CO WORKR	HARASS /DISCR	TRANS SPOUSE	TRANS WORK	COPING	GSI	GRADE	AGE	TENURE	EDUC	PARITY
PREGSUP	1.00												
COMSUP	0.63 *	1.00											
COWOKR	0.61 *	0.53 *	1.00										
HARASS	0.64 *	0.60 *	0.55 *	1.00									
TRANS-SP	0.04	0.10	0.09	0.17	1.00								
TRANS-WK	0.01	0.10	0.02	0.15	0.35 *	1.00							
COPING	0.24 *	0.34 *	0.50 *	0.28 *	0.30 *	0.11	1.00						
GSI	0.32 *	0.40 *	0.41 *	0.46 *	0.26 *	0.36 *	0.27 *	1.00					
GRADE	0.36 *	0.30 *	0.30 *	0.32 *	0.05	0.11	0.09	0.29 *	1.00				
AGE	0.39 *	0.32 *	0.37 *	0.38 *	0.02	0.09	0.28 *	0.38 *	0.57 *	1.00			
TENURE	0.26 *	0.23 *	0.20 *	0.25 *	0.09	0.23 *	0.26 *	0.25 *	0.26 *	0.71 *	1.00		
EDUC	0.30 *	0.20 *	0.29 *	0.22 *	0.09	0.13	0.13	0.27 *	0.80 *	0.57 *	0.17	1.00	
PARITY	0.01	0.01	0.05	0.13	0.14	0.30 *	0.15	0.16	0.03	0.11	0.12	0.04	1.00

Table 43

Note: * p > .05 Negative value

LONGITUDINAL CHANGES

filename:
Chg_1_2.PRS

LONGITUDINAL CHANGES

Time 1 minus Time 2	Table #	Page #
a. DIFFERENCE SCORES (n=102)	44	44
b. LONGITUDINAL DIFFERENCE GROUPS	45	44
c. DIFFERENCE SCORES (MEAN/S.D.)	46	44
d. CORRELATION MATRIX - TIME 1 by TIME 2	47	44
e. ORRELATION MATRIX - TIME 1	48	44
f. CORRELATION MATRIX - TIME 2	49	44
g. CHANGE IN COMMAND SUPPORT	50	45
h. CHANGE IN COMMAND SUPPORT (RAW DATA/S.D.)	51	45
i. CHANGE IN COMMAND SUPPORT BY GROUP	52	45
j. CHANGE IN COWORKER SUPPORT	53	45
k. CHANGE IN COWORKER SUPPORT BY GROUP (RAW DATA/S.D.)	54	45
l. CHANGE IN COWORKER SUPPORT BY GROUP	55	45
m. CHANGE IN PREGNANCY PROFILE SUPPORT	56	46
n. CHANGE IN PREGNANCY PROFILE SUPPORT (RAW DATA/S.D.)	57	46
o. CHANGE IN PREGNANCY PROFILE SUPPORT BY GROUP	58	46
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q. CHANGES IN HARASSMENT (RAW DATA/S.D.)	60	46
r. CHANGES IN HARASSMENT BY GROUP	61	46
s. CHANGE IN TRANSITION - SPOUSE	62	47
t. CHANGE IN TRANSITION - SPOUSE (RAW DATA/S.D.)	63	47
u. CHANGE IN TRANSITION - SPOUSE SUPPORT BY GROUP	64	47
v. CHANGE IN TRANSITION - WORK	65	47
w. CHANGE IN TRANSITION - WORK (RAW DATA/S.D.)	66	47
x. CHANGE IN TRANSITION - WORK SUPPORT BY GROUP	67	47
y. CHANGE IN GENERAL SEVERITY INDEX (# OF SYMPTOMS)	68	48
z. CHANGE IN GENERAL SEVERITY INDEX (# OF SYMPTOMS) (RAW DATA/S.D.)	69	48
aa. CHANGE IN GENERAL SEVERITY BY GROUP	70	48
ab. CHANGE IN WORK CLIMATE	71	48
ac. CHANGE IN WORK CLIMATE (RAW DATA/S.D.)	72	48

LONGITUDINAL CHANGES

Fundamental issues regarding change are what size of change constitutes a significant change and are differences due to "true" change or to error. In order to address these issues change scores were calculated with two methods. First, raw change scores were calculated by subtracting time one scores from scores at time two. Second, change scores that were less than a standard deviation different from the mean of the summary measure were recoded as no change (a difference score of zero). Because participant responses in time 1 and time 2 were naturally paired, paired comparison t-tests were used to test whether the mean changes were significantly different from zero. Finally, participants were sorted into different categories of change scores. Means and standard deviations for time one and time two are provided in Table 46. Correlation matrices of time 1 and time 2 scores are provided in Tables 47 to 49.

Change Scores

Raw change scores were compared to changes of greater than a standard deviation. The raw change scores were continuous and provided full information about participant responses. The standard deviation change scores collapsed participant responses that were less than a standard deviation different from the mean to zero. Raw change scores were more liberal estimates of change. Standard deviation change scores were more conservative estimates of change.

Changes in command support ranged from -3.66 to 2.0 (Tables 50-52). Thirty-nine percent of the participants reported no change in command support during pregnancy; 24% reported an improvement in command support; and 37% reported a reduction in command support. The standard deviation for command support was 0.96. Standard deviation change scores indicated that 71% (n=65) of the participants reported no change in command support during pregnancy; 13% (n=12) reported an improvement in command support; and 16% reported a reduction in command support.

Changes in coworker support ranged from -1.5 to 2.75 (Tables 53-55). Raw score changes indicated 13% (n=13) of the participants reported no change in coworker support during pregnancy; 42% reported an improvement in coworker support; and 45% reported a reduction in coworker support. The standard deviation for coworker support was 0.90. Standard deviation change scores suggested that 90% of the participants reported no change in coworker support; 6% reported improved coworker support; and 4% reported a reduction in coworker support.

Changes in pregnancy profile support ranged from -3.5 to 3.0 (Tables 56-58). Raw score changes indicated that 25% of the participants reported no change in pregnancy profile support; 31% reported an improvement in pregnancy profile support; and 44% reported a reduction in pregnancy profile support. The standard deviation for pregnancy profile support was 1.12. Standard deviation change scores suggested that 84% of the participants reported no change in pregnancy profile support; 9% reported an improvement; and 7% reported a reduction in support.

Changes in harassment-discrimination ranged from -2.4 to 3.6 (Tables 59-61). Raw score changes indicated that 38% of the participants reported no change; 28% reported an improvement; and 34% reported increased harassment-discrimination. The standard deviation for harassment-discrimination was 0.66. Standard deviation change scores suggested that 82%

of the participants reported no change in harassment-discrimination; 13% reported increased incidents; and 5% reported reduced incidences.

Changes in Work and Spouse Transition are provided in Tables 62-67. Changes in Work Transition ranged from -2.66 to 2.60. Raw score changes indicated that 15% of the participants reported no change in Work Transition; 45% reported increased Work Transition stress; and 40% reported reduced Work Transition stress. The standard deviation for Work Transition was 1.1. Standard deviation change scores suggested that 80% of the participants reported no change; 11% reported increased Work Transition stress; and 9% reported a reduction in Work Transition stress.

Changes in Spouse Transition ranged from -2.8 to 2.6. Raw score changes indicated that 24% of the participants reported no change in Spouse Transition; 36% reported increased Spouse Transition stress; and 40% reported reduced Spouse Transition stress. The standard deviation for Spouse Transition was 0.97. Standard deviation change scores suggested that 78% of the participants reported no change; 10% reported increased Spouse Transition stress; and 12% reported reduced Spouse Transition stress.

Changes in psychological well-being are reported in Tables 68-70. Changes in psychological well-being as measured by the General Severity Index of the Hopkins Symptoms Checklist ranged from -0.98 to 2.2. Raw score changes indicated that 1% of the participants reported no change in psychological well-being; 55% reported improved psychological well-being; and 44% reported reduced psychological well-being. The standard deviation for psychological well-being was 0.58. Standard deviation change scores suggested that 89% of the participants reported no change; 6% reported increased psychological well-being; and 5% reported reduced psychological well-being.

Changes in the summary measure Work Climate are depicted in Tables 71-72.

Paired Comparisons

Paired comparison t-tests were used to test whether mean changes were significantly different from zero. Participant responses in time 1 and time 2 were naturally paired. The change score means for coworker support, command support, pregnancy profile support, harassment, Spouse Transition, Work Transition, and psychological well-being were not significantly different from zero. The results indicate that changes in participant responses from time one to time two were not significantly different. Alternatively, significant differences may not have been detected by the paired t-test because of the small sample size and lack of power.

Demographic Predictors of Change Scores

Significant predictors of change scores are presented first and are followed by nonsignificant predictors. Demographics predicted changes in harassment, coworker support, command support, and Spouse Transition.

The Chi-squared difference test between rank (junior enlisted, NCOs, company grade officers, field grade officers) and the change in harassment was significant. The Chi-squared test equaled 19 with $p > .004$ and 6 degrees of freedom. Officers were more likely to report no change in harassment. Junior enlisted and NCO personnel were more likely to report an increase in harassment. The Chi-squared difference test between tenure and the change in harassment was significant. The Chi-squared value was 17 with $p > .03$ and 8 degrees of freedom. Personnel with less tenure were more likely to report an increase in harassment. The Chi-

squared difference test between education and the change in harassment was significant. The Chi-squared value was 14 with $p > .03$ and six degrees of freedom. Personnel with greater education were more likely to report no change in harassment.

The Chi-squared difference test between rank (enlisted and officers) and the change in coworker support was significant. The Chi-squared test was 9 with $p > .01$ and 2 degrees of freedom. Officers were more likely to report no change in coworker support. Enlisted personnel were more likely to report an improvement in coworker support.

The Chi-squared difference test between tenure and the change in command support was significant. The Chi-squared test was 17 with $p > .03$ and 8 degrees of freedom. Personnel with the least tenure were more likely to report a reduction in command support.

The Chi-squared difference test between marital status and changes in Spouse Transition was significant. The Chi-squared value was 20 with $p > .003$ and 6 degrees of freedom. Single personnel were more likely to report no change in Spouse Transition. Married personnel were more likely to report increased and decreased Spouse Transition.

There were no significant differences in rank and changes in coworker support, command support, Work Transition, and psychological well-being.. There were no significant differences in education and changes in command support, pregnancy support, coworker support, Work Transition, Spouse Transition, and psychological well-being. There were no significant differences in tenure and changes in coworker support, pregnancy support, Work Transition, and Spouse Transition. There were no significant differences in race and changes in coworker support, command support, pregnancy support, harassment, Work Transition, Spouse Transition or psychological well-being. There were no significant differences in marital status and changes in coworker support, command support, pregnancy support, harassment, Work Transition, or psychological well-being.

Difference Scores as Predictors of Outcomes

The Chi-squared difference test between the change in command support and turnover intentions was significant. The Chi-squared value was 16 with $p > .04$ and eight degrees of freedom. Personnel who reported an improvement in command support were more likely to intend to leave before the end of their enlistment. Personnel who reported a reduction in command support were more likely to intend to leave at the end of their enlistment. Personnel with no change in command support were more likely to intend to stay.

The Chi-squared difference test between the change in pregnancy support and turnover intentions was significant. The Chi-squared value was 20 with $p > .01$ and eight degrees of freedom. Personnel who reported an improvement in command support were more likely to intend to leave before the end of their enlistment. Personnel who reported a reduction in pregnancy support were more likely to intend to leave at the end of their enlistment. Personnel with no change in command support were more likely to intend to stay.

The Chi-squared difference test between the change in harassment and turnover intentions was significant. The Chi-squared value was 20 with $p > .01$ and eight degrees of freedom. Personnel with no change in harassment were more likely to intend to stay. Personnel with increased harassment were more likely to intend to leave.

Changes in coworker support, Work Transition, or Spouse Transition did not predict turnover intentions, turnover, or baby complications. Changes in command support, pregnancy support, harassment did not predict turnover or baby complications.

Group Change Scores

To further explore changes in participant responses over time, five categories of change were created. In the raw data, participants who reported no change were lumped together. This was a shortcoming because these participants did not necessarily have similar responses. Some of the participants reported unchanged positive conditions, some reported unchanged neutral conditions, and others reported unchanged negative conditions.

To further explore differences, new groups were formed. Participants who reported an improvement over time were coded as group five. Participants who reported a reduction over time were coded as group 1. Participants who reported no change were sorted into three groups. Participants who provided a negative response (no change) were coded as group two. Participants who provided positive responses (no change) were coded as group four. Participants who provided neutral responses (no change) were coded as group three. As a result of the grouping, there were five groups: the condition worsened, the condition was bad and is still bad, the condition was neutral and is still neutral, the condition was good and is still good, and the condition improved.

Descriptive information about Group Changes is provided in Tables 52, 55, 58, 61, 64, 67, and 70. The frequency of improved or worsened response categories remained the same. The "no change" frequency was broken into the three new categories: positive, neutral, and negative.

Demographic Predictors of Group Change Scores

Chi-squared difference test indicated that rank predicted coworker support groups. The Chi-squared value was 11 with $p > .02$ and 3 degrees of freedom. Officers were more likely to report a reduction in coworker support.

Chi-squared difference test indicated that rank predicted command support groups. The Chi-squared value was 24 with $p > .02$ and 12 degrees of freedom. Company grade officers were more likely to report a reduction in command support. Marital status predicted command support groups. The chi-squared value was 24 with $p > .02$ and 12 degrees of freedom. Married individuals were more likely to report an improvement in command support and no change positive command support.

Chi-squared difference test indicated that rank predicted harassment groups. The Chi-squared value was 19 with $p > .004$ and 6 degrees of freedom. Junior enlisted and NCO personnel were more likely to report an increase in harassment. Education predicted harassment groups. The Chi-squared value was 14 with $p > .03$ and 6 degrees of freedom. The least education personnel were more likely to report an increase in harassment. Tenure predicted harassment groups. The Chi-squared value was 17 with $p > .03$ and 8 degrees of freedom. Individuals with the least tenure were more likely to report an increase in harassment.

Chi-squared difference test indicated that marital status predicted Spouse Transition groups. The chi-squared value was 20 with $p > .02$ and nine degrees of freedom. Married participants were more likely to report a reduction in spouse transition.

Chi-squared difference test indicated that tenure predicted psychological well-being groups. The Chi-squared value was 27 with $p > .001$ and eight degrees of freedom. Participants with the least tenure were more likely to report an increase in psychological symptoms.

Chi-squared difference test indicated that rank did not differentiate pregnancy support groups, Work Transition, Spouse Transition, and psychological well-being. Chi-squared difference test indicated that education did not differentiate command support groups, coworker support groups, pregnancy support groups, Work Transition, Spouse Transition, or psychological well-being. Tenure did not predict coworker support groups, command support groups, or pregnancy support groups. Race did not predict coworker support groups, command support groups, pregnancy support groups, harassment groups, Work Transition, Spouse Transition, or psychological symptoms. Marital status did not predict coworker support groups, pregnancy support groups, harassment, Work Transition, or psychological symptoms groups.

Group Change Scores as Predictors of Outcomes

Command support groups, pregnancy support groups, and harassment groups predicted turnover intentions. The Chi-squared value for command support groups was 32 with $p > .01$ and 16 degrees of freedom. Individuals who reported an improvement in command support were more likely to intend to stay. The F-value for pregnancy support groups was 5 with a $p > .004$ and three degrees of freedom. The R-squared was .12. The Chi-square value was 27 with $p > .007$ and 12 degrees of freedom. Personnel with no change in positive pregnancy support reported the greatest intention to stay and were significantly different from participants who reported a reduction in pregnancy support. Harassment groups predicted turnover intentions. The F-value was 9 with $p > .0002$ and 2 degrees of freedom. The Chi-squared value was 20 with $p > .01$ and 8 degrees of freedom. Personnel with increased harassment reported the least intentions to stay.

Command support groups, harassment groups, and work transition groups predicted psychological well-being at time two. Command support groups predicted psychological well-being at time two. The overall model F-value was 8 with $p > .0001$ and 4 degrees of freedom. All groups were significantly different from the other groups. The positive no change group reported the fewest symptoms, the neutral no change group the next fewest symptoms, the positive change group the next fewest symptoms and the no change positive group the highest number of symptoms. Harassment groups predicted psychological well-being at time two. The overall model F-value was 5 with $p > .007$ and 2 degrees of freedom. Personnel with increase harassment reported the greatest number of psychological symptoms. Work transition predicted psychological well-being at time two. The model F-value was 7 with $p > .001$ and 4 degrees of freedom. Participants reporting no change high work transition stress reported the highest number of psychological symptoms at time two. Individual reporting no change neutral work transition stress reported the least number of psychological symptoms.

Pregnancy support groups did not predict turnover, psychological well-being at time two or baby complications. Coworker support groups did not predict turnover intentions, turnover, psychological well-being at time two or baby complications. Command support groups did not predict turnover or baby complications. Harassment groups did not predict turnover or baby complications. Work Transition groups did not predict turnover intentions, turnover, psychological well-being at time two or baby complications. Spouse Transition groups did not predict turnover intentions, turnover, or baby complications. Psychological well being groups did not predict turnover intentions, turnover, or baby complications.

DIFFERENCE SCORES (n=102)

(Time 2 minus Time 1)

44

LONGITUDINAL DIFFERENCE GROUPS *

(Time 2 minus Time 1)

* Worsened
No Change/Negative
No Change/Neutral
No Change/Positive
Improved

45

Difference Scores

	Time 1		Time 2	
	Means	S.D.	Means	S.D.
Pregnancy Support	3.72	.96	3.65	1.16
Command Support	3.87	.92	3.70	1.04
Coworker Support	3.71	.96	3.70	.83
Harassment/Discrim.	4.59	.67	4.51	.66
Transition - Spouse	4.06	.97	4.07	.97
Transition - Work	3.08	1.06	3.02	1.08
Coping	3.84	.87	3.84	.73
GSI	0.54	.52	.55	.63
Climate	4.00	.76	3.90	.76

46

Correlation Matrix
Time 1 by Time 2
n = 102

Time 2 / Time 1	PREG SUP	COM SUP	CO WORKR	HARASS /DISCR	TRANS SPOUSE	TRANS WORK	COPING	GSI	Climate
PREGSUP	0.68*	0.63*	0.54*	0.49*	0.09	0.06	0.37*	0.29*	0.68*
COMSUP	0.63*	0.68*	0.53*	0.61*	0.11	0.11	0.35*	0.41*	0.70*
COWOKR	0.59*	0.57*	0.73*	0.44*	0.03	0.13	0.49*	0.35*	0.69*
HARASS	0.41*	0.24*	0.40*	0.40*	0.16	0.25*	0.28*	0.34*	0.44*
TRANS-SP	0.08	0.02	0.07	0.11	0.61*	0.20*	0.20*	0.14	0.03
TRANS-WK	0.10	0.07	0.17	0.18	0.31*	0.59*	0.11	0.32*	0.15
COPING	0.22*	0.27*	0.33*	0.15	0.19	0.18	0.48*	0.17	0.30*
GSI	0.38*	0.34*	0.52*	0.36*	0.08	0.23*	0.30*	0.76*	0.49*
CLIMATE	0.68*	0.62*	0.69*	0.57*	0.09	0.16	0.47*	0.41*	0.76*

Note * p > 05

47

Correlation Matrix - Time 1
n = 102

Time 1 / Time 1	PREG SUP	COM SUP	CO WORKR	HARASS /DISCR	TRANS SPOUSE	TRANS WORK	COPING	GSI	Climate
PREGSUP	1.00								
COMSUP	0.77*	1.00							
COWOKR	0.66*	0.67*	1.00						
HARASS	0.49*	0.43*	0.53*	1.00					
TRANS-SP	0.01	0.10	0.01	0.19	1.00				
TRANS-WK	0.18	0.25*	0.21*	0.30*	0.33*	1.00			
COPING	0.38*	0.42*	0.49*	0.36*	0.27*	0.24*	1.00		
GSI	0.39*	0.50*	0.51*	0.36*	0.17	0.35*	0.32*	1.00	
Climate	0.85*	0.83*	0.90*	0.73*	0.07	0.26*	0.51*	0.53*	1.00

Note * p > 05

48

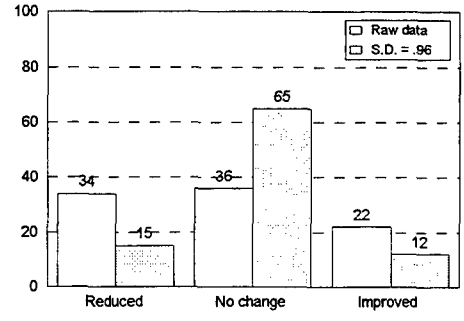
Correlation Matrix - Time 2
n = 102

Time 2 / Time 2	PREG SUP	COM SUP	CO WORKR	HARASS /DISCR	TRANS SPOUSE	TRANS WORK	COPING	GSI	Climate
PREGSUP	1.00								
COMSUP	0.82*	1.00							
COWOKR	0.61*	0.54*	1.00						
HARASS	0.64*	0.59*	0.55*	1.00					
TRANS-SP	0.04	0.02	0.09	0.17	1.00				
TRANS-WK	0.01	0.00	0.02	0.15	0.35*	1.00			
COPING	0.24*	0.29*	0.50*	0.28*	0.30*	0.11	1.00		
GSI	0.32*	0.28*	0.41*	0.46*	0.26*	0.36*	0.27*	1.00	
Climate	0.90*	0.84*	0.83*	0.81*	0.06	0.04*	0.38	0.45*	1.00

Note * p > 05

49

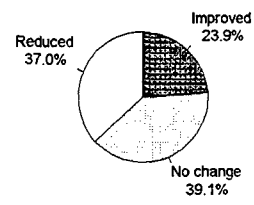
Change in Command Support between Time 1 and Time 2



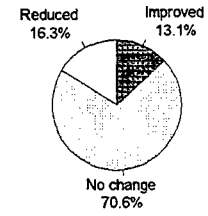
50

Change in Command Support between Time 1 and Time 2

Raw Data

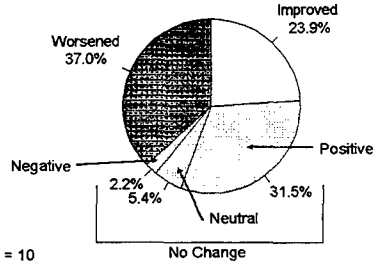


S.D. .96



51

Change in Command Support by Group between Time 1 and Time 2 (n=102)



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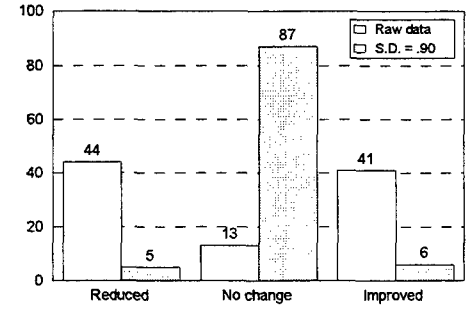
52

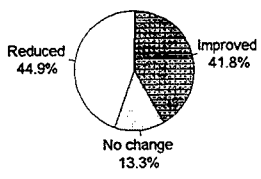
Change in Coworker Support between Time 1 and Time 2



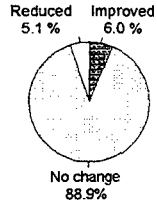
53

Change in Coworker Support between Time 1 and Time 2

Raw Data

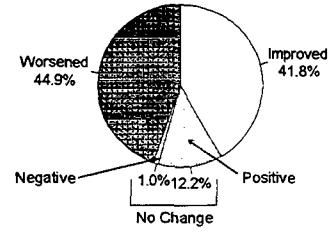


S.D. .90



54

Change in Coworker Support by Group between Time 1 and Time 2 (n=102)



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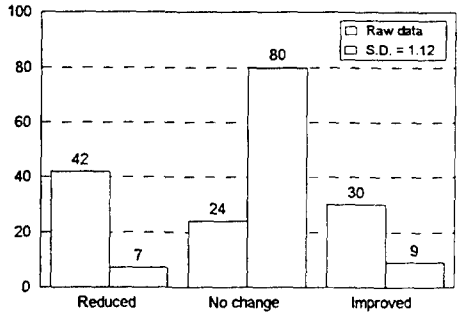
55

Change in Pregnancy Profile Support between Time 1 and Time 2

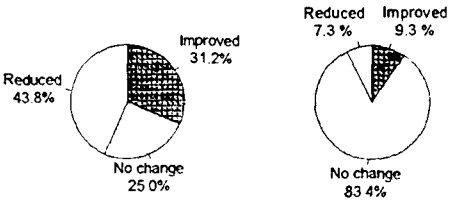


56

Change in Pregnancy Profile Support between Time 1 and Time 2

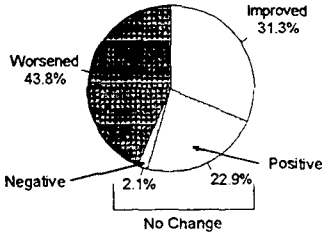
Raw Data

S.D. 1.12



57

Change in Pregnancy Profile Support by Group between Time 1 and Time 2 (n=102)



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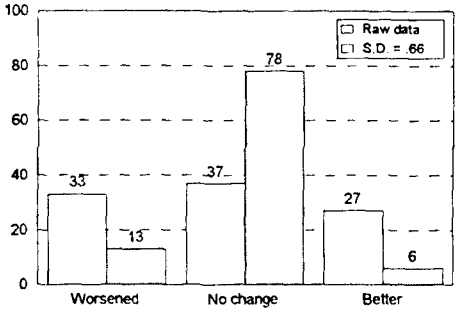
58

Change in Harassment between Time 1 and Time 2

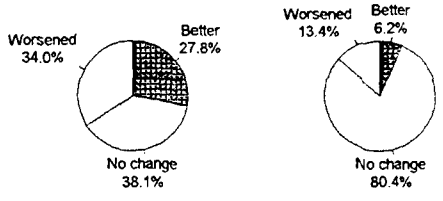


59

Change in Harassment between Time 1 and Time 2

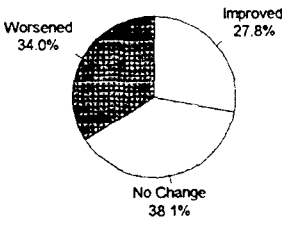
Raw Data

S.D. .66



60

Change in Harassment/Discrimination Support by Group between Time 1 and Time 2 (n=102)



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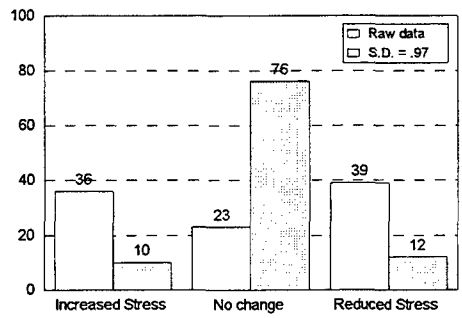
61

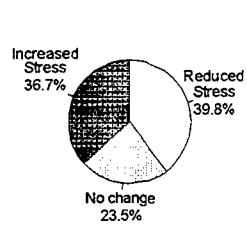
Change in Transition - Spouse between Time 1 and Time 2



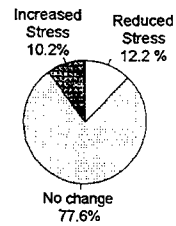
62

Change in Transition - Spouse between Time 1 and Time 2

Raw Data

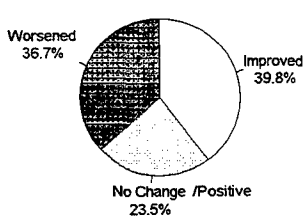


S.D. .97



63

Change in Transition-Spouse Support by Group between Time 1 and Time 2 (n=102)



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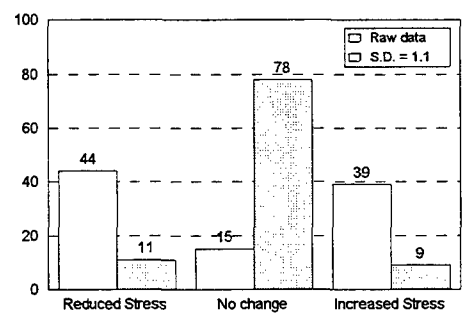
64

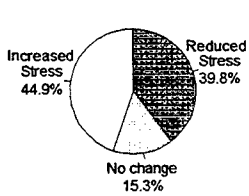
Change in Transition - Work between Time 1 and Time 2



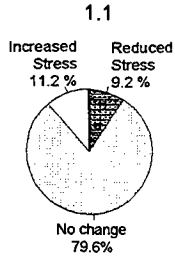
65

Change in Transition - Work between Time 1 and Time 2

Raw Data

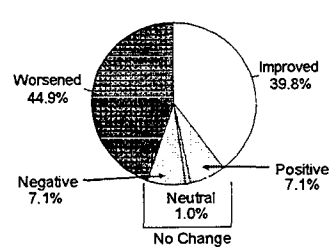


S.D. 1.1



66

Change in Transition-Work Support by Group between Time 1 and Time 2 (n=102)



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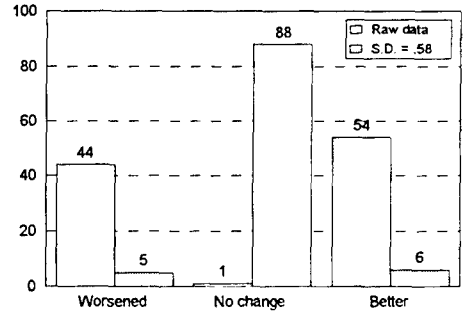
67

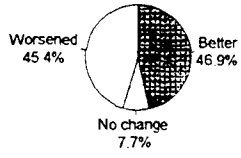
Change in General Severity Index
(number of symptoms)
between Time 1 and Time 2



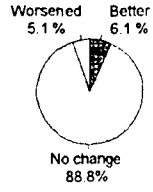
68

Change in General Severity Index
(number of symptoms)
between Time 1 and Time 2

Raw Data

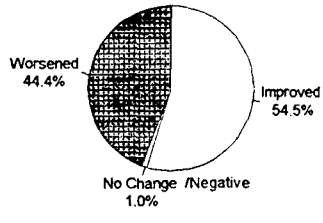


S.D. .58



69

Change in General Severity Index by Group
between Time 1 and Time 2
(n=102)



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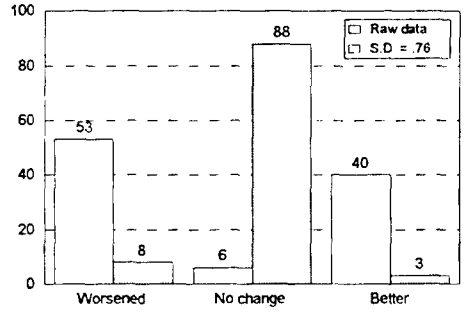
70

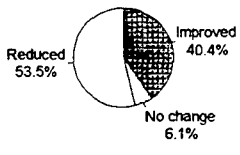
Change in Work Climate
(Time 1 minus Time 2)



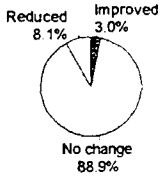
71

Change in Work Climate
(Time 1 minus Time 2)

Raw Data



S.D. .76



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MEDICAL HISTORY

filename:
MEDHIST.PRS

MEDICAL HISTORY

	Page #
MEDICAL HISTORY	49

Prior Problems vs. Time 1 vs Time 2	Table #	Page #
MEDICAL HISTORY	73	55
PARITY		
NUMBER	74	55
PERCENT	75	55
TYPES OF PREGNANCY PROBLEMS		
NUMBER	76	55
PERCENT	77	55
NUMBER OF PREGNANCY PROBLEMS		
NUMBER	78	56
PERCENT	79	56
PREGNANCY PROBLEMS		
NUMBER	80	56
PERCENT	81	56
UNIVARIATE PREDICTORS OF MEDICAL CONDITIONS	82	56
MULTIPLE REGRESSION PREDICTORS OF MEDICAL CONDITIONS	83	56
SINCE YOU FOUND OUT YOU WERE PREGNANT, HAVE YOU REDUCED YOUR USE OF ALCOHOL?		
NUMBER	84	57
PERCENT	85	57
SINCE YOU FOUND OUT YOU WERE PREGNANT, HAVE YOU REDUCED YOUR USE OF CIGARETTES?		
NUMBER	86	57
PERCENT	87	57
SINCE YOU FOUND OUT YOU WERE PREGNANT, HAVE YOU REDUCED YOUR USE OF CAFFEINE?		
NUMBER	88	57
PERCENT	89	57
WERE YOU HOSPITALIZED FOR PREGNANCY COMPLICATIONS?		
NUMBER	90	58
PERCENT	91	58
HAVE YOU BEEN CONFINED TO BEDREST DURING THIS PREGANACY?		
NUMBER	92	58
PERCENT	93	58

MEDICAL HISTORY

A brief medical history was provided by each of the participants in the initial and follow-up questionnaires. Participants who had been pregnant before provided obstetric medical history in the initial questionnaire. Forty-two percent of the total initial sample of participants were experiencing their first pregnancy. Forty-one percent of the follow-up eligible initial samples were experiencing their first pregnancy. Thirty-seven of the follow-up sample were experiencing their first pregnancy (see Tables 74 and 75). A detailed description of the medical history of the initial sample of participants was provided by Evans and Rosen (1996).

Medical conditions were hypothesized to affect delivery outcomes, work climate, performance, turnover, and psychological well-being. The effects of maternal medical conditions on outcomes may be direct or indirect. For example, maternal medical conditions may directly reduce work effort because a woman with medical conditions may not physically feel well. Alternatively, maternal medical conditions may indirectly reduce work effort through increased psychological distress. A woman with a greater number of medical conditions may worry more about the health of her baby and may experience increased psychological distress that may directly affect work effort.

Description of Medical Problems

Frequencies of prior pregnancy problems, pregnancy problems at the time of the initial survey, and pregnancy problems at the time of the follow-up survey are provided for the follow-up sample in Tables 76 to 81. Comparisons of the number of prior pregnancy problems, time one pregnancy problems, and time two pregnancy problems for the follow-up sample are provided in Tables 76 to 81.

About 38% of the follow-up sample who had prior pregnancies had no prior pregnancy problems. Thirty-three percent had a single prior pregnancy problem compared to 14% at time one and 31% at time two. Prior pregnancy problems were cumulative over the entire prior pregnancy. Time one problems were limited to problems in the first and second term of pregnancy. Time two problems were cumulative medical problems over the current pregnancy.

Prediction of Medical Problems

Regression and analysis of variance were used to assess the relationship among demographics and number of medical problems. Univariate results are provided in Table 82. Stepwise multiple regression results are provided in Table 83.

Univariate results indicated that rank ($F=6.4$, $p > .01$), prior medical conditions ($F=32$, $p > .001$), time one medical conditions ($F=115$, $p > .0001$), time one psychological well-being ($F=12$, $p > .007$), and time two psychological well-being ($F=11$, $p > .001$) predicted time two medical conditions. Enlisted participants reported a greater number of medical conditions in the follow-up survey than officer participants.

Rank accounted for 6% of the variance in time two medical problems. Prior medical problems accounted for 25% of the variance in time two medical problems. Medical problems at time one accounted for 54% of the variance in time two medical problems. Psychological distress at time one accounted for 11% of the variance. Psychological distress at time two accounted for 10% of the variance. Tenure, marital status, race, education, parity, age, branch of

service, housing arrangement, and pregnancy planning and timing did not predict number of medical problems.

Stepwise multiple regression results indicated that prior medical conditions, medical conditions at time one, psychological health at time two, and tenure in concert predicted medical conditions at time two. The model R-squared was .76 with partial R-squared values of .05 for prior medical conditions, .63 for time one medical conditions, .04 for time two psychological health, and .04 for tenure. Variables that did not meet entry level significance included rank, race, marital status, housing, branch of service, education, age, parity, gestation, psychological health at time one, pregnancy planning, pregnancy timing, or timing in career.

Baby Complications

Prior pregnancy problems, pregnancy problems at time one, and pregnancy problems at time two were hypothesized to predict baby complications. Mothers with a greater number of medical conditions were thought to be more likely to have adverse delivery outcomes.

Logistic regression was used to test the hypotheses because the dependent variable, baby complication, was categorical. For the time one sample, prior pregnancy problems were nearly significant with an odds ratio of .85 and 95% confidence intervals of .7 to 1.01. Pregnancy problems at time one were nearly significant with an odds ratio of .85 and 95% confidence intervals of .7 to 1.02.

For the time two sample, prior pregnancy problems, pregnancy problems at time one and at time two were not significant predictors of adverse baby outcomes. The odds ratio for prior pregnancy problems was .87 with confidence intervals from .65 to 1.12. The odds ratio for time one problems was .87 with 95% confidence intervals from .55 to 1.4. The odds ratio for time two problems was .93 with 95% confidence intervals from .68 to 1.3.

Health Risk Behaviors

Participants reported little use of alcohol, cigarettes, and caffeine (Tables 84 to 89.). Sixty-one percent reported a reduction in use of alcohol during pregnancy at time one and time two. Thirty-seven percent reported never using alcohol in time one and 38% in time two. Two participants reported that they did not reduce their use of alcohol in time one and one participant reported no reduction in use of alcohol in time two.

Twenty-one percent of the participants reported a reduction in use of cigarettes at time one and 18% in time two. Seventy-eight percent of the participants reported never smoking cigarettes in time one and 81% in time two. One participant did not reduce smoking in time one and time two.

Eighty-two percent of the participants reported a reduction in use of caffeine at time one and at time two. Nine percent of the participants reported never consuming caffeine in time one and time two. Eight percent of the participants did not reduce their consumption of caffeine in time one and 7% in time two.

Hospitalization, Bed rest & Work

The follow-up sample was fairly healthy and continued to work during pregnancy. Hospitalization rates and Bed rest rates were modest. The majority of participants reported working during prior pregnancies and did not stop working prior to delivery (Tables 90 to 93).

Eighty-two percent of the participants with prior pregnancies were not hospitalized for pregnancy related medical complications in prior pregnancies. Ninety-six percent of the follow-up participants were not hospitalized for pregnancy complications at time one. Ninety percent of the follow-up participants were not hospitalized for pregnancy complications at time two.

Eighty-one percent of the participants with prior pregnancies were not confined to Bed rest for pregnancy related medical complications in prior pregnancies. Ninety-three percent of the follow-up participants were not confined to bed rest for pregnancy complications at time one. Eighty-seven percent of the follow-up participants were not confined to bed rest for pregnancy complications at time two. Ninety-five percent of the follow-up participants worked during previous pregnancies and only 30% stopped working prior to delivery.

We hypothesized that hospitalization and bed rest rates were associated with the number of medical conditions. Participants with greater medical complications have riskier pregnancies and are more likely to be hospitalized and advised bed rest.

Logistic regression was used to test hypotheses because dependent variables were categorical. Number of medical problems predicted hospitalization rates and bed rest in time one and time two. Prior number of medical problems and time one problems were not significant predictors of time two hospitalization and bed rest.

The odds ratio for predicting hospitalization from medical conditions in time one was 2.2 with 95% confidence intervals from 1.4 to 3.6. The odds ratio for predicting hospitalization from medical conditions in time two was 3.5 with 95% confidence intervals from 1.6 to 7.8.

The odds ratio for predicting bed rest from medical conditions in time one was 2.0 with 95% confidence intervals from 1.1 to 3.6. The odds ratio for predicting bed rest from medical conditions in time two was 2.3 with 95% confidence intervals from 1.4 to 3.6.

In the model with prior medical conditions, medical conditions at time one, and medical conditions at time two predicting bedrest at time two, the only significant odds ratio was time two medical conditions. The odds ratio was 2.3 with upper and lower 95% confidence intervals of 1.4 to 3.6.

Discussion

Maternal medical conditions provided information about the biological health of the mother. The literature demonstrates that the health of the mother influences delivery outcomes. Although maternal medical conditions in prior pregnancies, at time one, and at time two did not significantly differentiate baby outcomes, they were nearly significant. The follow-up sample of participants was fairly healthy and continued to work during pregnancy. Hospitalization rates and Bed rest rates were modest.

The relationship among demographics and multiple measures of maternal medical conditions were assessed. The only demographic variable that was significant in the rigorous stepwise multiple regression analysis was tenure. Prior medical conditions, medical conditions at time one, and psychological health also predicted maternal medical conditions at time two.

Tenure reflects a mixture of participant characteristics. Participants with longer tenure tend to be higher ranking, have greater job stability, have demonstrated successful job performance, and receive greater pay. These characteristics may reflect a stable and socially supported individual who is less likely to have adverse birth outcomes. As expected the results indicate that psychological health and maternal medical conditions influence each other.

Because participants reported little use of alcohol, cigarettes and caffeine and because most of those who did use alcohol, cigarettes, or alcohol reduced their use once they found out they were pregnant, further analysis was not warranted. The scant use and reduced use of alcohol, cigarettes, and caffeine during pregnancy may make this sample different from the U.S. population of pregnant women. Caution is warranted when making generalizations.

Medical History:

Prior Problems (n=64)
vs.
Initial Resonse - Time 1 (n=102)
vs.
Follow-up Response -Time 2 (n=102)

73

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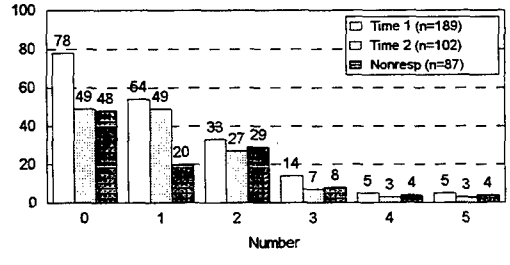
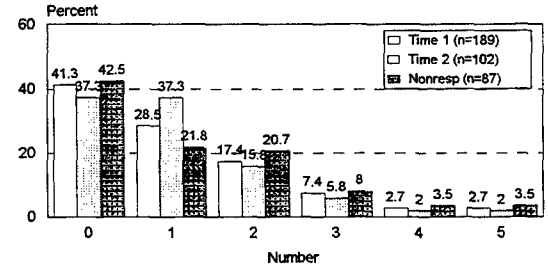
Parity



74

Parity



75

Types of Pregnancy Problems	Prior (n=64)	Time 1 (n=102)	Time 2 (n=102)
Vaginal Bleeding	15	10	13
Premature contractions	14	2	22
Swelling/Edema	9	5	21
Other problems	7	9	31
Water broke early	6	0	2
High blood pressure	5	3	6
Kidney/bladder problems	5	2	4
Vaginal/Pelvic infection	4	5	11
Twins/Triplets	3	1	0
Toxemia	2	0	0
Baby not growing	2	1	2
Diabetes	2	0	2
Placenta Previa/Abruption	2	0	2
Incompetent cervix or cerclage	2	0	2
Baby birth defects	1	0	0
Heart Problems	1	2	2
Lung problems	0	1	1
Intestinal/Gall/Liver	0	0	1

76

Types of Pregnancy Problems	Prior (n=64)	Time 1 (n=102)	Time 2 (n=102)
Vaginal Bleeding	23 %	10 %	13 %
Premature contractions	22 %	2 %	22 %
Swelling/Edema	14 %	5 %	21 %
Other problems	11 %	9 %	31 %
Water broke early	9 %	0 %	2 %
High blood pressure	8 %	2 %	6 %
Kidney/bladder problems	8 %	2 %	4 %
Vaginal/Pelvic infection	6 %	5 %	11 %
Twins/Triplets	5 %	1 %	0 %
Toxemia	3 %	0 %	0 %
Baby not growing	3 %	1 %	2 %
Diabetes	3 %	0 %	2 %
Placenta Previa/Abruption	3 %	0 %	2 %
Incompetent cervix or cerclage	3 %	0 %	2 %
Baby birth defects	2 %	0 %	0 %
Heart Problems	2 %	2 %	2 %
Lung problems	0 %	1 %	1 %
Intestinal/Gall/Liver	0 %	0 %	1 %

77

Number of Pregnancy Problems

	Prior (n=69)	Time 1 (n=102)	Time 2 (n=102)
No problem	n = 24	n = 77	n = 34
One problem	n = 21	n = 14	n = 32
Two problems	n = 8	n = 6	n = 22
Three problems	n = 5	n = 1	n = 5
Four problems	n = 0	n = 3	n = 5
Five problems	n = 4	n = 0	n = 3
Six problems	n = 0	n = 0	n = 1
Eight problems	n = 1	n = 0	n = 0

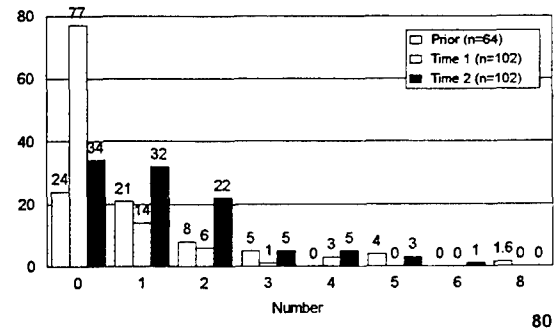
78

Number of Pregnancy Problems by Percent

	Prior (n=69)	Time 1 (n=102)	Time 2 (n=102)
No problem	38.1 %	76.2 %	33.3 %
One problem	33.3 %	13.9 %	31.4 %
Two problems	12.7 %	5.9 %	21.6 %
Three problems	8.0 %	1.0 %	4.9 %
Four problems	6.3 %	3.0 %	4.9 %
Five problems	0 %	0 %	2.9 %
Six problems	0 %	0 %	1.0 %
Eight problems	1.6 %	0 %	0 %

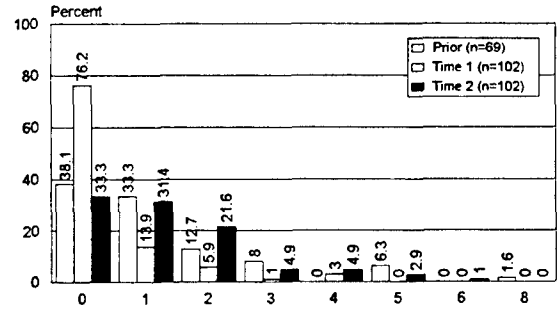
79

Pregnancy Problems



80

Pregnancy problems



81

Univariate Predictors of Medical Conditions (Time 2)

Military Pay Grade	F = 6.4 p> .01 r = 0.06
Prior Med Conditions	F = 32 p> .01 r = 0.25
Med Cond (Time 1)	F = 115 p> .01 r = 0.54
Psych Well-being - GSI (Time 1)	F = 12 p> .01 r = 0.11
Psych Well-being - GSI (Time 2)	F = 11 p> .01 r = 0.10

82

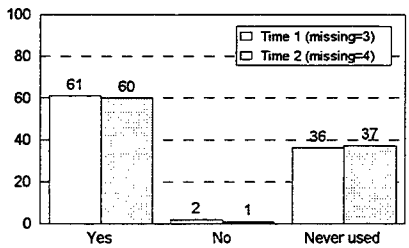
Multiple Regression Predictors of Medical Conditions (Time 2)

Stepwise Selection Method

	Model R^2
Medical Problems (Time 1)	.64
Psych Hlth - (Time 2)	.68
Prior Med Problems	.73
Tenure	.76

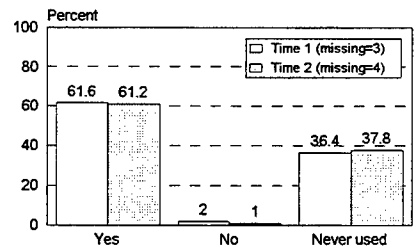
83

"Since you found out you were pregnant, have you reduced your use of Alcohol?" (n=102)



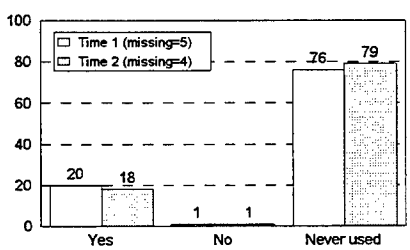
84

"Since you found out you were pregnant, have you reduced your use of Alcohol?" (n=102)



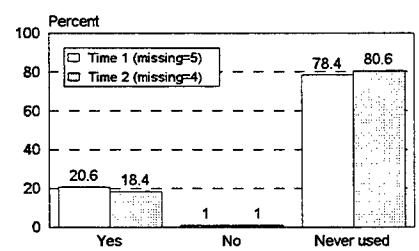
85

"Since you found out you were pregnant, have you reduced your use of Cigarettes?" (n=102)



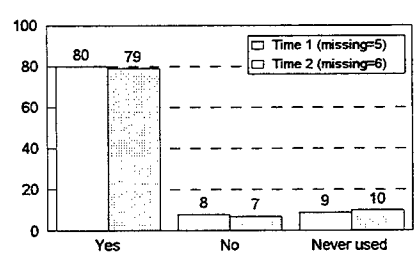
86

"Since you found out you were pregnant, have you reduced your use of Cigarettes?" (n=102)



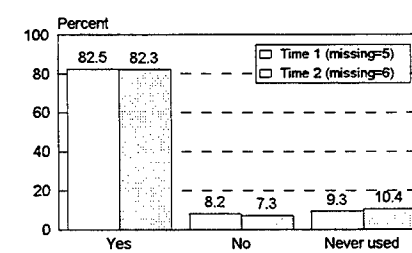
87

"Since you found out you were pregnant, have you reduced your use of Caffeine?" (n=102)



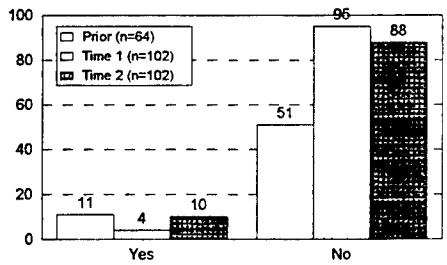
88

"Since you found out you were pregnant, have you reduced your use of Caffeine?" (n=102)



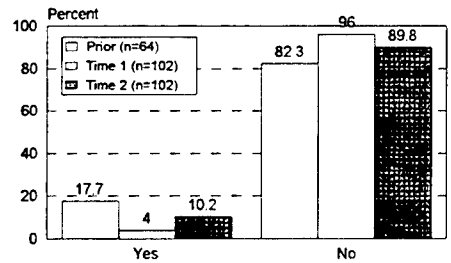
89

"Were you hospitalized for pregnancy complications?"



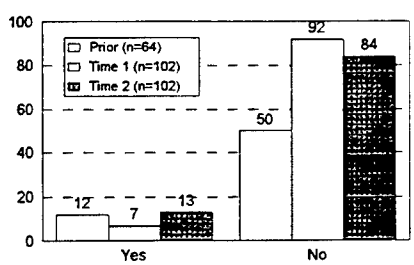
90

"Were you hospitalized for pregnancy complications?"



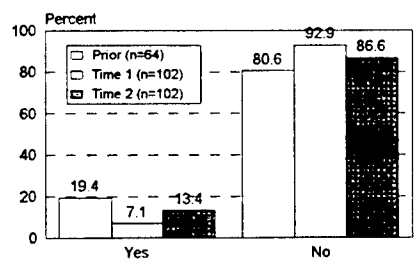
91

"Have you been confined to bedrest during this pregnancy?"



92

"Have you been confined to bedrest during this pregnancy?"



93

COPING AND SOCIAL SUPPORT

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COPING.PRS

COPING AND SOCIAL SUPPORT

Time 1 vs Time 2	Table #	Page #
SOURCES OF SOCIAL SUPPORT	94	63
FAMILY SUPPORT		
NUMBER	95	63
PERCENT	96	63
UNIT MEMBER SUPPORT		
NUMBER	97	63
PERCENT	98	63
FRIEND SUPPORT		
NUMBER	99	64
PERCENT	100	64
PROFESSIONAL THERAPIST SUPPORT		
NUMBER	101	64
PERCENT	102	64
CHAPLAIN/CLERGY SUPPORT		
NUMBER	103	64
PERCENT	104	64
PHYSICIAN SUPPORT		
NUMBER	105	65
PERCENT	106	65
COMMUNITY SERVICES SUPPORT		
NUMBER	107	65
PERCENT	108	65
FAMILY SUPPORT GROUP		
NUMBER	109	65
PERCENT	110	65
DEMOGRAPHIC PREDICTORS	111	66
PREDICTORS OF OUTCOMES	113	66

COPING AND SOCIAL SUPPORT

There were eight different sources of social support or coping: family members, unit members, friends, professional therapist, chaplain/minister/clergy, doctor, community services, and family support group. Descriptive information is provided in Tables 94 to 110.

In the initial survey, the majority of participants found that family members, friends, and their doctor were very helpful. Most reported that unit members were neutral or helpful. Only 24% reported seeing a professional therapist and the majority of them indicated that the therapist was neutral in helping them. Only 27% reported seeing a chaplain, minister, or clergy and the majority of them indicated that the chaplain was neutral or helpful in helping them. Only 31% reported the use of community services and the majority of them found community services neutral in helping. Only 23% reported help from family support groups and most reported the family support group as neutral. Similar findings were reported in the follow-up survey.

Demographic Predictors

Rank, tenure, education, and age were positively associated with support from unit members, but not with any other sources of support (Tables 111 and 112). Navy participants reported higher support from unit members than Army participants. There was no other branch of service difference in sources of support. Participants in their third trimester of pregnancy reported higher support from community services. There was no other trimester difference in sources of support. There was no marital status or race difference in social support.

Predictors of Outcomes

Support from unit members was positively associated with psychological well-being, turnover intentions, and actual turnover (Tables 113 and 114). Support from friends, doctors, community services and family support groups was positively associated with psychological-well-being. Social support from family members, unit members, friends, professional therapist, chaplain/minister/clergy, doctor, community services, and family support group did not predict baby complications.

Housing and Use of Services

One of the objectives of the study was to assess whether pregnant women who lived on base utilized military provided social support services more than those who lived off base. To address this objective a Chi-squared analysis was used to test for differences in the type of housing and the eight sources of support.

In the initial sample there were no significant differences in type of housing and the eight sources of support. In the follow-up sample, participants who owned their own homes were more likely to report that unit members were very helpful.

Discussion

Participants reported that family members, friends, and their doctor provided the most social support during pregnancy. Unit members were perceived as neutral or helpful during pregnancy. Few participants utilized therapists, chaplains, community services or family support groups and if they did their help was regarded as neutral.

Demographic variables differentiated sources of support. Higher ranking, older individuals with longer tenure, more education, and who owned their homes reported greater support from unit members. The more vulnerable population, composed of junior, less educated individuals, did not receive equal support from the unit. Unit support was positively associated with psychological well-being, turnover intentions, and actual turnover. Improving support from unit members may enhance the well-being and retention of junior personnel who are pregnant. There were no differences in use of military provided support services among personnel who lived on or off base.

COPING
Sources of Social Support
Time 1 (n=352)
vs
Time 2 (n=102)

94

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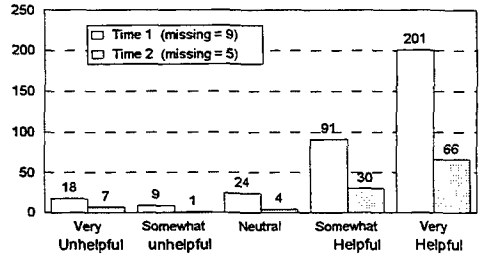
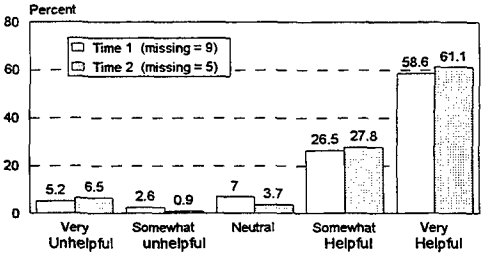
Family Support
(n=352)



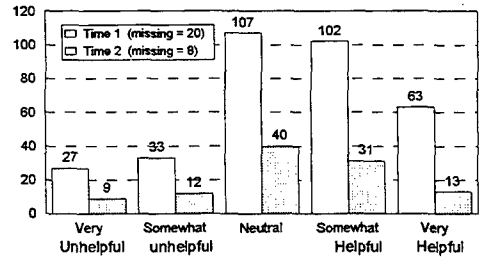
95

Family Support
(n=352)



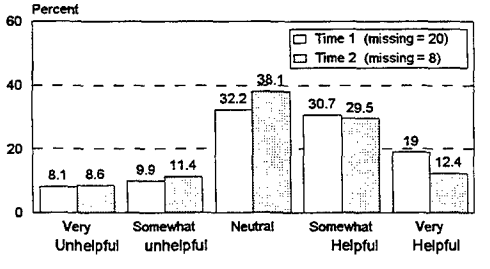
96

Unit Member Support
(n=352)



97

Unit Member Support
(n=352)



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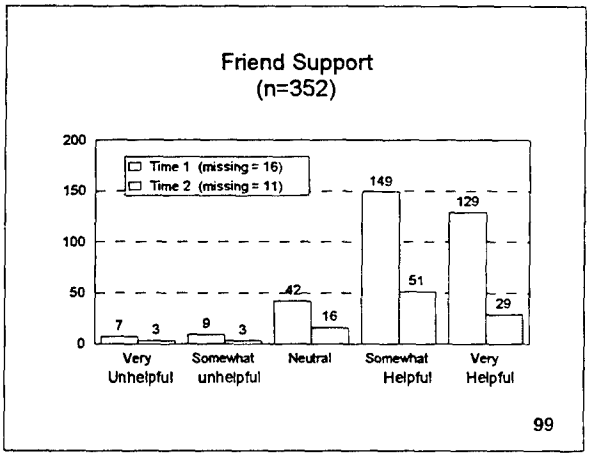
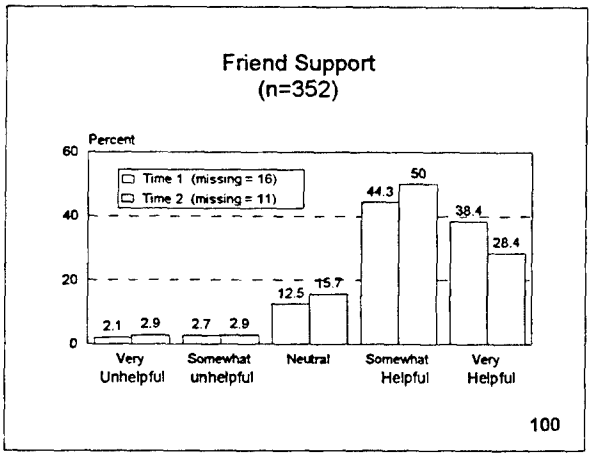
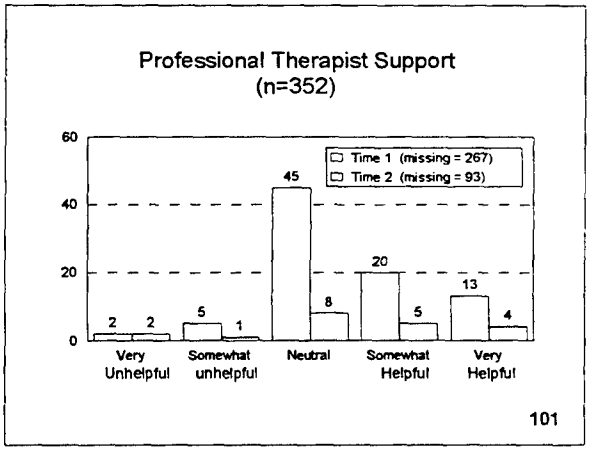
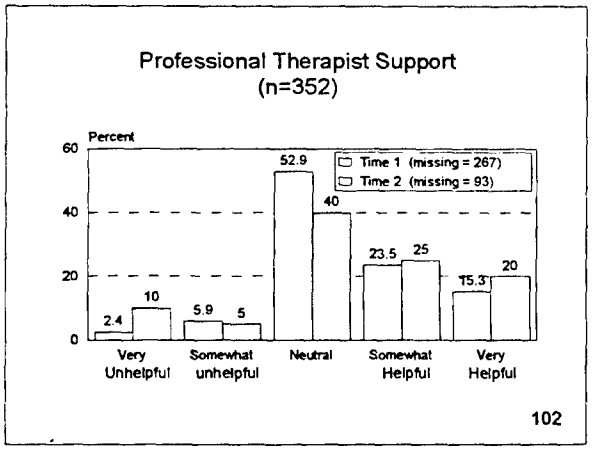
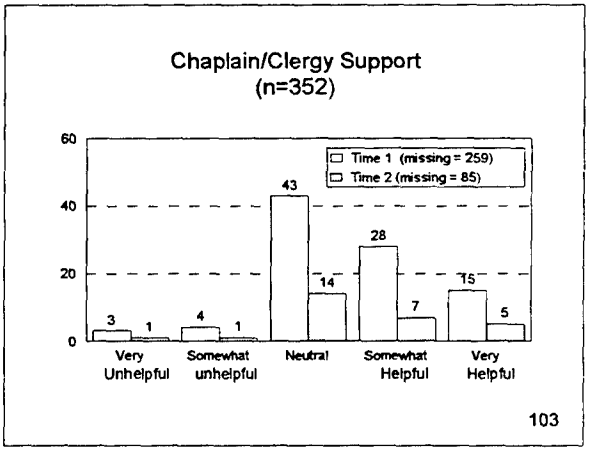
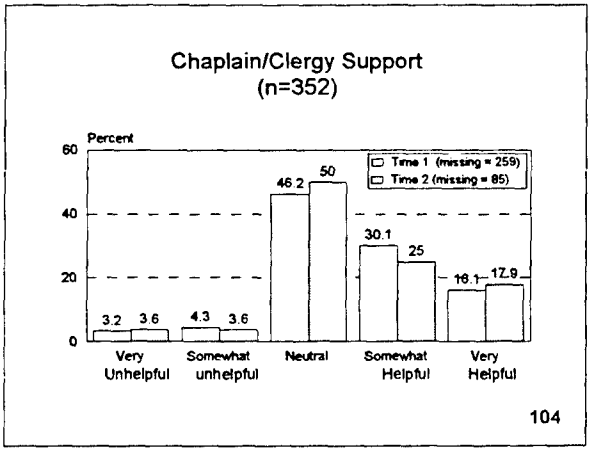

Friend Support
(n=352)
Time 1 (missing = 16)
Time 2 (missing = 11)
200
150
100
50
0
7
3
9
3
42
16
149
51
129
29
Very Unhelpful
Somewhat unhelpful
Neutral
Somewhat Helpful
Very Helpful
99


Friend Support
(n=352)
Percent
Time 1 (missing = 16)
Time 2 (missing = 11)
60
40
20
0
2.1
2.9
2.7
2.9
12.5
15.7
44.3
50
38.4
28.4
Very Unhelpful
Somewhat unhelpful
Neutral
Somewhat Helpful
Very Helpful
100

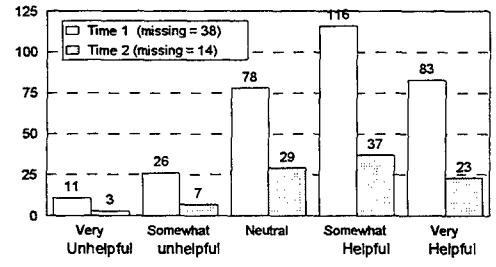

Professional Therapist Support
(n=352)
Time 1 (missing = 267)
Time 2 (missing = 93)
60
40
20
0
2
2
5
1
45
8
20
5
13
4
Very Unhelpful
Somewhat unhelpful
Neutral
Somewhat Helpful
Very Helpful
101


Professional Therapist Support
(n=352)
Percent
Time 1 (missing = 267)
Time 2 (missing = 93)
60
40
20
0
2.4
10
5.9
5
52.9
40
23.5
25
15.3
20
Very Unhelpful
Somewhat unhelpful
Neutral
Somewhat Helpful
Very Helpful
102


Chaplain/Clergy Support
(n=352)
Time 1 (missing = 259)
Time 2 (missing = 85)
60
40
20
0
3
1
4
1
43
14
28
7
15
5
Very Unhelpful
Somewhat unhelpful
Neutral
Somewhat Helpful
Very Helpful
103

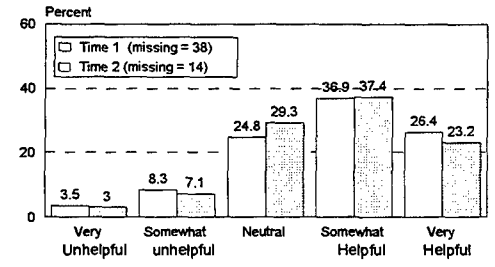

Chaplain/Clergy Support
(n=352)
Percent
Time 1 (missing = 259)
Time 2 (missing = 85)
60
40
20
0
3.2
3.6
4.3
3.6
46.2
50
30.1
25
16.1
17.9
Very Unhelpful
Somewhat unhelpful
Neutral
Somewhat Helpful
Very Helpful
104

Physician Support (n=352)



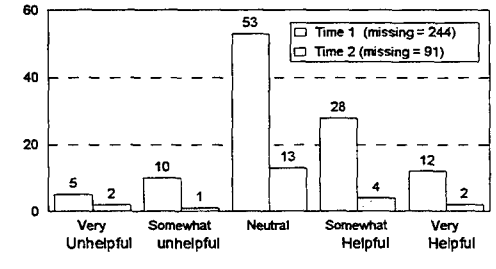
105

Physician Support (n=352)



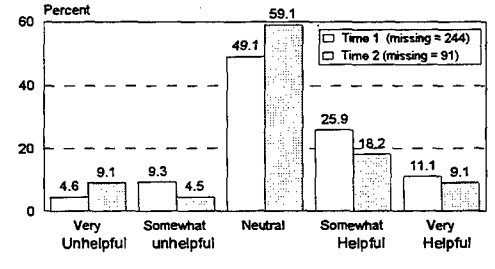
106

Community Services Support (n=352)



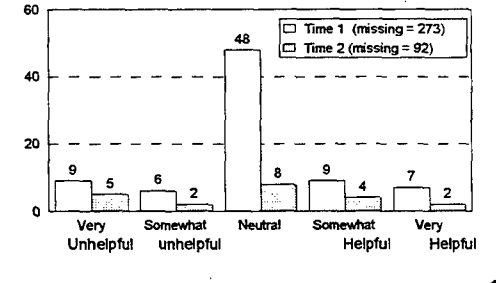
107

Community Services Support (n=352)



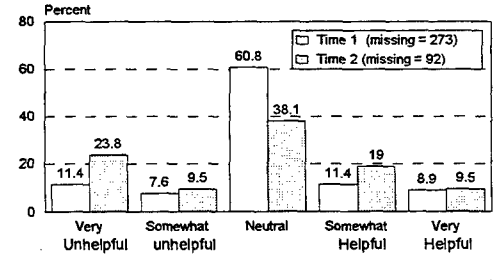
108

Family Support Group (n=352)



109

Family Support Group (n=352)



110

Demographic Predictors (n=352)

Support	Pay Grade	Age	Tenure	Marital Status	Branch	Ethnicity	Education	Turnover Intent	Gestation	Medical Probs	Preg Planng
Family	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Unit Members	+	+	+	NS	+	NS	+	+	NS	NS	NS
Friends	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Prof Therapist	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chaplain	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Physician	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Com-munity	NS	NS	NS	NS	NS	NS	NS	NS	+	NS	NS
Family Support Gp	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

+ = positive association

111

Demographic Predictors Continued (n=352)

Support	Hours Worked	Days Missed	Pregnancy Timing	Timing of Career	Command Support	Parity	Medical Problems	Hours Worked	Days Missed	GSI	Turnover
Family	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Unit Members	NS	NS	NS	NS	NS	NS	NS	NS	NS	+	+
Friends	NS	NS	NS	NS	NS	NS	NS	NS	NS	+	NS
Prof Therapist	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chaplain	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Physician	NS	NS	NS	NS	NS	NS	NS	NS	NS	+	NS
Com-munity	NS	NS	NS	NS	NS	NS	NS	NS	NS	+	NS
Family Support Gp	NS	NS	NS	NS	NS	NS	NS	NS	NS	+	NS

+ = positive association

112

Predictors of Outcomes (n=352)

Support	Pay Grade	Age	Tenure	Marital Status	Branch	Ethnicity	Education	Turnover Intent	Gestation	Medical Probs	Preg Planng
Family	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Unit Members	+	+	+	NS	+	NS	+	+	NS	NS	NS
Friends	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Prof Therapist	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chaplain	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Physician	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Com-munity	NS	NS	NS	NS	NS	NS	NS	NS	+	NS	NS
Family Support Gp	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

+ = positive association

113

Predictors of Outcomes Continued (n=352)

Support	Hours Worked	Days Missed	Pregnancy Timing	Timing of Career	Command Support	Parity	Medical Problems	Hours Worked	Days Missed	GSI	Turnover
Family	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Unit Members	NS	NS	NS	NS	NS	NS	NS	NS	NS	+	+
Friends	NS	NS	NS	NS	NS	NS	NS	NS	NS	+	NS
Prof Therapist	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chaplain	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Physician	NS	NS	NS	NS	NS	NS	NS	NS	NS	+	NS
Com-munity	NS	NS	NS	NS	NS	NS	NS	NS	NS	+	NS
Family Support Gp	NS	NS	NS	NS	NS	NS	NS	NS	NS	+	NS

+ = positive association

114

WORK REASSIGNMENT

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LONGITUD.PRS

WORK REASSIGNMENT

LONGITUDINAL SAMPLE	Table #	Page #
WORK REASSIGNMENT	115	73
WERE YOU ASSIGNED TO A DIFFERENT JOB BY YOUR COMMANDER BECAUSE YOU WERE PREGNANT?	116	73
WERE YOU REASSIGNED BECAUSE OF EXPOSURE TO HAZARDOUS MATERIALS?	117	73
WERE YOU ASSIGNED TO A DIFFERENT JOB BY YOUR COMMANDER BECAUSE OF PHYSICAL REQUIREMENTS?	118	73
WERE YOU REASSIGNED FOR NEITHER HAZARDOUS MATERIALS NOR PHYSICAL REQUIREMENTS?	119	73
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OF THOSE REASSIGNED: MEANINGFUL/NECESSARY	121	74
(Time 1, Time 2, Nonrespondent) LEGEND	122	74
THE WORK IS MEANINGFUL		
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MY WORK REASSIGNMENT WAS NECESSARY		
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PERCENT	126	74
HOW DO YOU THINK YOUR PERFORMANCE EVALUATIONS WILL BE AFFECTED BY YOUR WORK REASSIGNMENT?		
NUMBER	127	75
PERCENT	128	75
HOW DO YOU THINK YOUR CHANCES OF PROMOTION WILL BE AFFECTED BY YOUR WORK REASSIGNMENT?		
NUMBER	129	75
PERCENT	130	75

WORK REASSIGNMENT

Descriptive Characteristics of Reassignment

Work reassignment was compared from time one to time two (Tables 116 to 138). In the total initial sample of 350, 20% (n=68) were reassigned work due to pregnancy. At time one, 18% (n=18) of the follow-up participants reported that they were reassigned compared to 25% (n=26) in time two. For the follow-up sample, 78% reported that the reason for work reassignment was due to physical requirements in time one compared to 71% in time two. Fifty percent reported that the reason for work reassignment was due to exposure to hazardous materials in time one and 42% in time two. Nine participants were reassigned for both hazardous materials and physical requirements in time two. Five participants were reassigned for neither exposure to hazardous materials nor physical requirements in time two.

In the total initial sample of 350, 74% agreed that the reassigned work was meaningful and 79% agreed that it was necessary. Of those reassigned in the follow-up sample, 61% agreed that they were reassigned to meaningful work in time one compared to 67% in time two. Sixty-seven percent reported that the work reassignment was necessary in time one compared to 75% in time two.

At time one, 56% of the participants who were reassigned due to hazardous exposure agreed that the reassignment was meaningful and 78% agreed that it was necessary. At time two, 73% of the participants reassigned due to hazardous exposure agreed that the reassignment was meaningful and 82% agreed that it was necessary. At time one, 57% of the participants reassigned due to physical requirements agreed that the reassignment was meaningful and 71% agreed that it was necessary. At time two, 63% of the participants reassigned due to physical requirements agreed that the reassignment was meaningful and 79% agreed that it was necessary.

The data indicate that work reassignment occurred primarily in the first part of pregnancy. Only a few additional participants were reassigned during their third trimester. This finding indicates that supervisors made work reassignment decisions when they found out a subordinate was pregnant and for the most part did not change that decision over the course of pregnancy.

The majority of participants who were reassigned agreed that the reassignment was meaningful and necessary. Over time, participants who were reassigned were more likely to agree that reassignment was meaningful and necessary. Participants were more likely to find work reassignment meaningful and necessary when the reason for reassignment was exposure to hazardous materials.

Demographic Characteristics

Stepwise multivariate logistic regression was used to analyze demographic predictors of work reassignment because the dependent variable was categorical. In the initial sample (n=350) rank, education, and number of medical conditions predicted work reassignment. The odds ratios were 1.3, 1.8, and .76. The 95% confidence intervals were 1.1 to 1.5, 1.1 to 2.9, and .62 to .95, respectively. Gestation, race, marital status, and parity were not significant predictors. Participants with higher rank, greater education and fewer medical conditions were less likely to be reassigned.

In the follow-up sample (n=102), the only significant demographic predictor of work reassignment was rank. The odds ratio for rank was 1.3 with 95% upper and lower confidence intervals of 1.1 and 1.5. Higher ranking individuals were less likely to be reassigned when pregnant.

Effects of Reassignment

Of those reassigned in the initial sample, 49% reported that work reassignment due to pregnancy had no effect on their performance evaluation; 21% reported negative effects; and 30% reported positive effects (Tables 127 and 128). In terms of promotion opportunities, 54% reported that work reassignment had no effect; 22% reported negative effects; and 24% reported positive effects (Tables 129 and 130).

Of those reassigned in the follow-up sample, 63% reported that work reassignment due to pregnancy had no effect on their performance evaluation at time one and 58% at time two; 25% reported a negative effect at time one and 32% at time two; and 13% reported a positive effect at time one and 11% at time two. In terms of promotion opportunities, 63% reported that work reassignment had no effect at time one and 58% at time two; 25% reported a negative effect at time one and 32% at time two; and 13% reported positive effects at time one and 11% at time two.

Analysis of variance (ANOVA) was used to assess the effects of reassignment on the dependent variables. In the initial sample, reassignment predicted psychological well-being ($F=7.0$, $p > 0.005$), work effort ($F=7.3$, $p > 0.007$), and turnover intentions ($F=19$, $p > 0.001$). The findings indicated that participants who were reassigned reported elevated psychological distress, reduced work effort, and increased turnover intentions.

Due to an error in the questionnaire design, measures of work effort and turnover intentions at time two were not available. In the follow-up sample, work reassignment was not significantly related to psychological well-being.

Reasons for Reassignment

Physical requirement, exposure to hazardous materials, or undisclosed were the different reasons given for work reassignment. Analysis of variance was the method used to test whether the reasons for reassignment predicted psychological well-being, work effort, and turnover intentions.

In the initial sample, no significant differences were found for work effort ($F=0.9$, $p > 0.5$) or psychological well-being ($F=0.3$, $p > 0.8$). The overall model for turnover intentions was significant ($F=5.4$, $p > 0.002$). The T test between physical limitations and undisclosed reasons groups was significant at the alpha = 0.05 level, the difference between means was 1.2. Participants who reported that they were reassigned due to physical limitations reported the greatest intentions to stay in the organization. Participants who reported that they were reassigned for undisclosed reasons reported the least intent to stay in the organization. In the follow-up sample, reassignment due to physical limitations predicted psychological well-being, but exposure to hazardous materials did not.

Time one and time two results differed. More participants at time two reported that work reassignment negatively affected performance evaluation and promotion opportunities. While work reassignment alone was not significantly related to psychological well-being, work reassignment for physical reasons was positively associated with psychological distress.

Meaning and Necessity of Reassignment

Of those reassigned, participants reported the degree to which they perceived the work reassignment as meaningful and necessary. Multiple regression analysis was used to assess the effects of meaningfulness and necessity of work reassignment on psychological well-being, work effort, and turnover intentions. In the initial sample, the necessity of work reassignment did not predict the dependent variables. The meaningfulness of work reassignment predicted psychological well-being (-0.20, $p > 0.003$) and work effort (0.18, $p > 0.03$), but not turnover intentions (0.07, $p > 0.5$). In the follow-up sample, neither meaningfulness nor necessity of work reassignment predicted psychological well-being.

Discussion

The majority of the participants were not reassigned due to their pregnancy. Participants were reassigned primarily for physical requirements and/or exposure to hazardous materials.

Hypotheses regarding demographic predictors of reassignment were partially supported. Participants with higher rank were less likely to be reassigned in both the initial and follow-up sample. In the initial sample, participants with greater education and fewer medical conditions were less likely to be reassigned. There was no significant difference in work reassignment based on gestation, parity, race, or marital status in either sample.

The findings indicate that pregnant women in subordinate positions in the organization were more vulnerable to work reassignment. Alternatively, because there are fewer higher ranking personnel in the military, it is more difficult to replace them. Hence, the organization may be more tolerant of senior ranking women with pregnancy related work limitations.

Independent of rank, education predicted reassignment. Personnel with greater education were less likely to be reassigned which suggests organizational support or tolerance. The number of medical conditions was positively associated with reassignment. This suggests that reassignment was based on sound judgment and medical advice and was not discriminatory. Reassignment was not based on the term of pregnancy, marital status, race, or number of children that provided additional evidence of a nondiscriminatory work climate.

These findings indicate that for the most part the military is in compliance with federal pregnancy laws and policies and does not unnecessarily discriminate against pregnant women. The data also provide support that work reassignment of pregnant women in the military is based primarily on the protection of the mother and child. Indirectly, the work reassignment of pregnant women eliminates the threat to unit performance due to physical limitations and reduced ability of pregnant women to perform the full range of job requirements.

The effects of work reassignment were complex. While the majority of participants reported positive perceptions of performance appraisal and promotion opportunities, participants who were reassigned reported reduced psychological health, work effort, and intent to stay in the organization. The reasons for work reassignment and the meaning/necessity of work reassignment further differentiated psychological health, work effort, and turnover.

Our primary hypothesis that women who were reassigned due to their pregnancy would report reduced psychological well-being, work effort, and retention intentions were confirmed in the initial sample, but not in the follow-up sample. When participants were reassigned for physical limitations they reported reduced psychological well-being. Turnover intentions were negatively influenced when reasons for reassignment were not disclosed.

The examination of the meaning and necessity of reassignment produced mixed results. The necessity of reassignment did not predict psychological well-being, work effort, or turnover intentions. Participants who indicated that the work reassignment was meaningful reported greater psychological well-being and work effort. Consistent with our hypothesis, meaningless work reassignment exacerbated psychological distress and contributed to the withdrawal of work effort. Reassignment, regardless of meaningfulness or necessity, was the only predictor of turnover intentions.

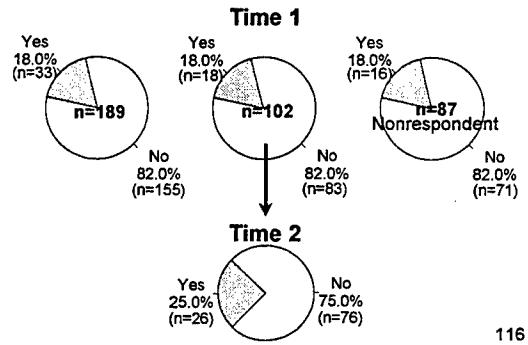
The support network at work may be a substitute for a family support network for pregnant military women. Work reassignment may disrupt the work support network and negatively affect well-being, work effort, and turnover intentions.

LONGITUDINAL SAMPLE

Work Reassignment

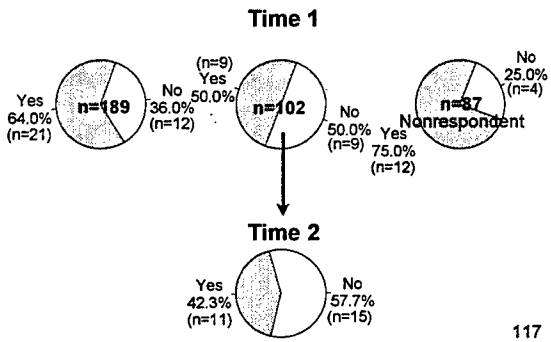
115

Were you assigned to a different job by your commander because you were pregnant?



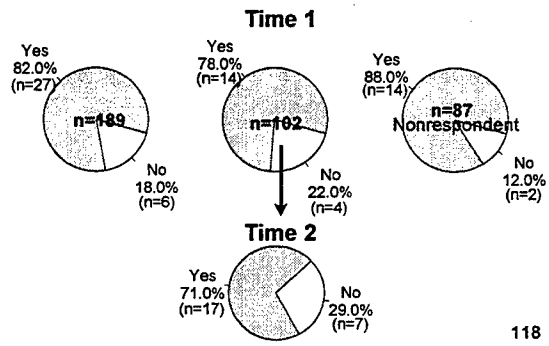
116

Were you reassigned because of exposure to hazardous materials?



117

Were you assigned to a different job by your commander because of physical requirements?



118

Were you reassigned for **neither** hazardous materials nor physical requirements? (Follow-up sample)

(N = 26) n = 5 or 19 %

(N = 102) n = 5 or 5 %

119

Were you reassigned for **both** hazardous materials and physical requirements? (Follow-up sample)

(N = 26) n = 9 or 35 %

(N = 102) n = 9 or 9 %

120

Of those reassigned:

	Mearningful	Necessary
All (Time 1)	61 %	67 %
All (Time 2)	67 %	75 %
Haz mat (Time 1)	56 %	78 %
Haz mat (Time 2)	73 %	82 %
Physical (Time 1)	57 %	71 %
Physical (Time 2)	63 %	79 %

(Follow-up sample)

121

LEGEND

n = 33/189 (Time 1)

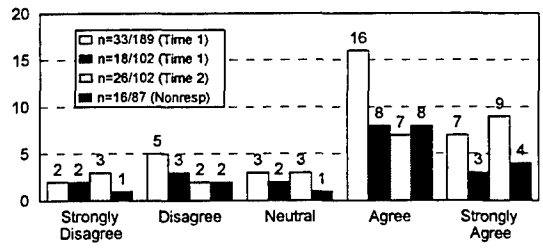
n = 18/102 (Time 1)

n = 26/102 (Time 2)

n = 16/87 (Nonrespondent)

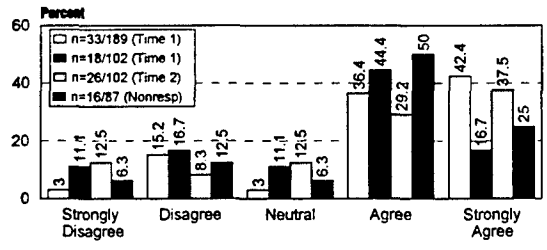
122

The work is meaningful



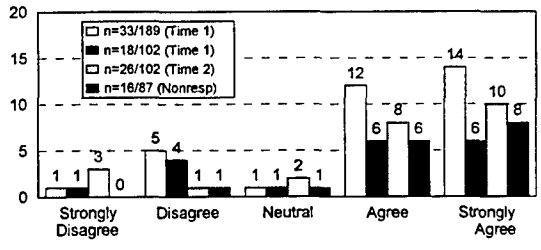
123

The work is meaningful



124

My work reassignment was necessary



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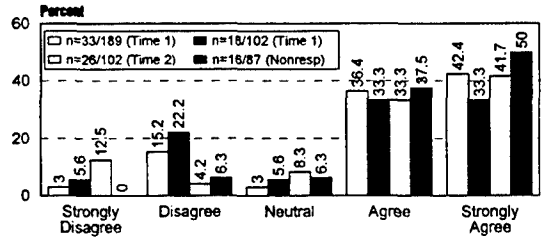
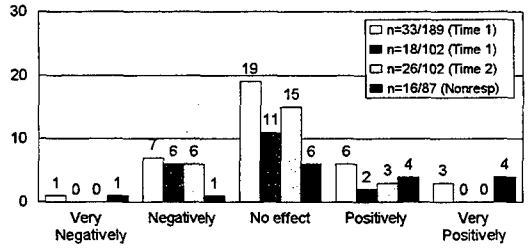
My work reassignment was necessary



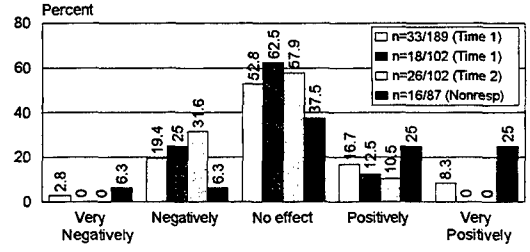
126

How do you think your performance evaluations will be affected by your work reassignment?



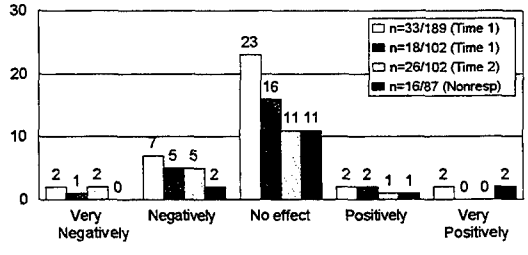
127

How do you think your performance evaluations will be affected by your work reassignment?



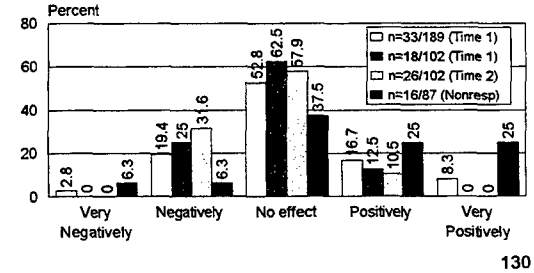
128

How do you think your chances of promotion will be affected by your work reassignment?



129

How do you think your chances of promotion will be affected by your work reassignment?



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MILITARY CAREER OPPORTUNITIES

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MILITARY CAREER OPPORTUNITIES

CAREER	Table #	Page #
SAMPLE DATA	131	83
LEGEND (Time 1 (n=33), Time 1 (n=102), Time 2, Nonrespondent)	132	83
HOW DO YOU THINK BEING PREGNANT HAS AFFECTED YOUR CHANCES TO MAKE THE MILIARY A CAREER?		
NUMBER	133	83
PERCENT	134	83
HOW DO YOU THINK BEING PREGNANT WILL AFFECT YOUR CAREER PROGRESSION OR PROMOTION?		
NUMBER	135	83
PERCENT	136	83
CHANGE IN CAREER OPPORTUNITIES BETWEEN TIME 1 AND TIME 2	137	84
DESCRIPTIVE STATISTICS (MEAN/S.D./ITEMS/ALPHA)	138	84
CORRELATION MATRIX	139	84
MODEL RESULTS	140	84
TOTAL EFFECTS OF THE FINAL MODEL	141	84
MODELS	**Figure #**	**Page #**
TESTED MODEL	1	85
FINAL MODEL	2	85

MILITARY CAREER OPPORTUNITIES

Perceptions of career opportunities among pregnant military women were analyzed in the initial and follow-up samples (Tables 133 to 136). Demographics, pregnancy planning, career timing, maternal medical problems, psychological well-being, and work climate were hypothesized to differentiate perceptions of career opportunities. A better understanding of the factors that contribute to positive and negative perceptions of career opportunities of pregnant women may lead to the development of organizational policies that enhance the retention of women by creating supportive work climates and reducing work stress.

In the initial sample (n=350), 65% of the participants reported that pregnancy had no effect on career opportunities; 25% reported that pregnancy negatively affected career opportunities; and 9% reported that pregnancy positively affected career opportunities. In the follow-up sample (n=102), 56% of the participants reported that pregnancy had no effect on career opportunities at time one and 68% at time two; 36% reported a negative effect at time one and 27% at time two; and 8% reported positive effects at time one and 6% at time two.

A difference score was calculated for the longitudinal sample by subtracting time two report of career opportunities from time one. Sixty-seven percent reported no change in career opportunities from time one to time two; 16% reported a reduction in career opportunities; and 17% reported an improvement in career opportunities (Table 137).

Predictors of Career Opportunities

In the total initial sample (n=350) multiple regression results indicated that there was no significant difference in perceptions of career opportunities based on rank, age, marital status, education, tenure, race, gestation, pregnancy planning, maternal medical conditions, command support, pregnancy support, or harassment. Timing of pregnancy in career, coworker support, and psychological well-being were significant predictors of career opportunities ($F=4.3$, $p > .04$; $F=3.9$, $p > .05$; and $F=4.7$, $p > .03$). The overall model F-value was 4.3 ($p > .006$) with an R-Square of 0.06. The interactions were not significant.

The regression analysis was repeated with the follow-up data (n=102). The overall model with timing of pregnancy, coworker support and psychological well-being was not significant ($F=1.87$, $p > 0.14$). Coworker support was the only significant predictor of career opportunities in time two ($F=3.79$, $P > 0.05$, estimate=0.20, R-square = .05).

A Structural Model of the Predictors of Career Opportunities and Turnover Intentions

The next step was to assess the effects of the predictor variables and career opportunities on turnover intentions. The model tested in Figure 1 is not an exhaustive model of turnover, but rather a limited model of the effects of career opportunities and its predictors on turnover.

The correlation matrix with standard deviations of coworker support, timing in career, psychological well-being (GSI), career opportunities, and turnover intentions is provided in Table 139. In the proposed model psychological well-being, coworker support, and pregnancy timing in career were exogenous predictors of career opportunities. Career opportunities moderated the relationship among the predictors and turnover (Figure 1). A covariance structural modeling technique was used to test the proposed and null models. The results are presented in Table 140.

The overall fit of the initial model was poor as indicated by the significant Chi-square difference test, nonsignificant regression path from coworker support to career opportunities, and high residuals (4.9-7.0). The model was modified by eliminating the path from coworker support to career opportunities and adding a path from coworker support to turnover intentions. The modification was theoretically justified based on prior research by Royle (1985) that indicated work group relationships were the primary reason for turnover among military women.

The overall fit of Model 2 was poor as indicated by the significant Chi-square difference test and high residuals (3.4-7.9). All paths were significant. Analysis of the residuals indicated that the model could be improved by adding a path from psychological well-being to coworker support. The modification was justified based on the theory that psychological well-being influences perceptions of coworker support. Psychologically healthy personnel may perceive coworkers more positively, or engage in more social interactions with coworkers than personnel who are psychologically distressed.

The overall fit of Model 3 was poor as indicated by the significant Chi-square difference test and moderately high residuals (1.3-2.0). Analysis of the residuals indicated that the fit of the model could be improved by adding direct paths from pregnancy timing in career and psychological well-being to turnover intentions. These adjustments were theoretically consistent. Personnel who believe there is a good time in a career to become pregnant may be more likely to stay in the organization. Psychologically healthy personnel may feel better about themselves, their coworkers, career opportunities, and intend to stay in the organization.

The overall fit of the final model (Figure 2) was good as indicated by the nonsignificant Chi-square difference test, significant regression weights, and small residuals. Furthermore, the Goodness of Fit Index was .99 (Joreskog & Sorbom, 1988); Delta-1 Bentler-Bonnet Index was .98 (Bentler & Bonnet, 1980); Delta-2 Bollen Index was .99 (Bollen, 1988); and Akaike Information Criterion was 40 (Akaike, 1987) which in concert indicated a good fit of the model to the data.

Total, direct, and indirect effects are listed in Table 141. Psychological well-being had the greatest total effect on turnover (.60), followed by coworker support (.39), timing in career (.36), and career opportunities (.22).

Discussion

The majority of participants reported that pregnancy had no effect on their career opportunities. This finding was encouraging because it provides evidence that lends support to a work environment that is relatively free from pregnancy discrimination. On the other hand, 25% of the participants reported that pregnancy negatively affected their career opportunities. It may be that there are individual leaders or suborganizations within the military where pregnant personnel are not treated consistent with existing equal employment opportunity policy. Further research is needed to explore this issue.

The results were complex. The hypotheses regarding demographic differences in perceptions of career opportunities were for the most part rejected. The data did not support the notion that pregnant personnel were treated differentially based on age, marital status, level of education, tenure, race, or term of pregnancy. These findings were contrary to expectation, but paint a positive picture of the organization. These findings provide compelling evidence that the military does not have a system wide pregnancy discrimination problem.

The hypothesis regarding planning was partially supported. Contrary to expectation, pregnancy planning was not significantly related to perceptions of career opportunities. This suggests that regardless of whether or not you plan your pregnancy, perceptions of career opportunities are unaffected. The theory that an unplanned pregnancy results in a crisis that negatively affects perception of career opportunities was rejected. The theory that planners have more positive career outlooks was partially supported. Pregnancy planning had no affect, while pregnancy timing in career had a positive affect on perception of career opportunities in time one.

Contrary to expectation, the number of medical problems did not differentiate perceptions of career opportunities. This may be a shortcoming of the measure. The measure examined number of medical conditions. It may be that particular medical conditions rather than number of medical conditions predicts perceptions of career opportunities. Further research is needed to address this issue.

The hypothesis regarding work climate was partially supported. Command support, pregnancy medical profile support, and harassment-discrimination were rejected as predictors of perceptions of career opportunities. Coworker support was supported as a predictor of career opportunities in both time periods. This finding is consistent with the literature. Royle (1985) found that women separating from the military rated poor work group relationships as the primary reason for leaving. In the follow-up sample, rank was added to the model and was found to play a significant role in perceptions of career opportunities. Higher ranking personnel reported greater career opportunities.

The hypothesis regarding psychological well-being was supported. Psychologically healthy pregnant personnel reported better career opportunities.

In time one, the multiple regression analysis of the independent variables coworker support, timing of pregnancy in career, and psychological well-being; and the dependent variable career opportunities resulted in significant main effects and no significant interaction. Pregnant personnel who reported greater coworker support, greater psychological well-being, and believed there is a good time in a career to become pregnant, perceived better career opportunities.

The final structural model differed from the initial model in several ways. Perceptions of career opportunity did not completely modify the relationship among the predictor variables (coworker support, psychological well-being, and pregnancy timing in career) and turnover. Pregnancy timing in career and psychological well-being directly and indirectly affected turnover.

Coworker support had a direct effect on turnover, but was not related to career opportunities. This finding contradicted the results of the multivariate regression analysis where coworker support was positively related to career opportunities. When turnover was included, coworker support was a strong predictor of turnover and had no direct or indirect relationship with career opportunities. Participants who reported greater coworker support indicated that they were more likely to stay in the organization.

The relationship of pregnancy timing in career with turnover was not fully moderated by career opportunities. Pregnancy timing in career had a direct effect on turnover as well as an indirect effect on turnover through career opportunities. Participants believing there was a good time in a career to become pregnant, reported better career opportunities, and intentions to stay in the organization.

Psychological well-being was not fully moderated by career opportunities. Psychological well-being directly affected turnover and indirectly affected turnover through career opportunities and coworker support. Psychologically healthy participants reported better coworker relationships, career opportunities, and intentions to stay in the organization.

Clearly, the psychological health of pregnant personnel played a dominant role in perceptions of career opportunities, coworker support, and intentions to stay in the organization. What is unclear is the causal order of psychological well-being, coworker support, career opportunities, and turnover intentions. The model used cross sectional data and tested whether psychological well-being influenced the other variables. It may be that coworker support, career opportunities, and turnover have some causal affect on psychological well-being.

As discussed, coworkers may be a source of stress or support for pregnant personnel. Lack of coworker support may contribute to poor psychological well-being over time. Perceptions of career opportunities occur within the context of the climate of the organization. An organization that is not supportive, may lead to psychological distress that may impair perceptions of opportunities that may be available somewhere else in the larger organization. Personnel who have no intention of staying in the organization may not have examined career opportunities because they are irrelevant. Further longitudinal research is needed to assess the causal order of the variables in the model.

CAREER
Sample Data

131

LEGEND

n = 189 (Time 1)

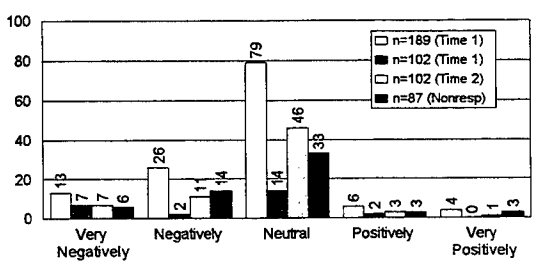
n = 102 (Time 1)

n = 102 (Time 2)

n = 87 (Nonrespondent)

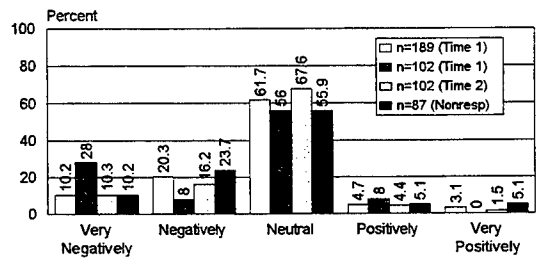
132

How do you think being pregnant has affected your chances to make the military a career?



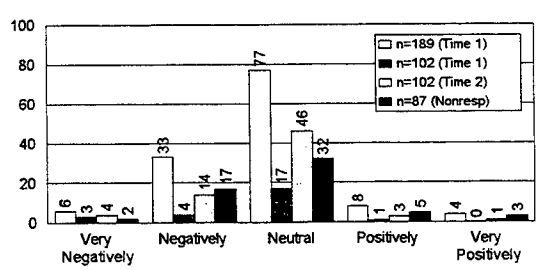
133

How do you think being pregnant has affected your chances to make the military a career?



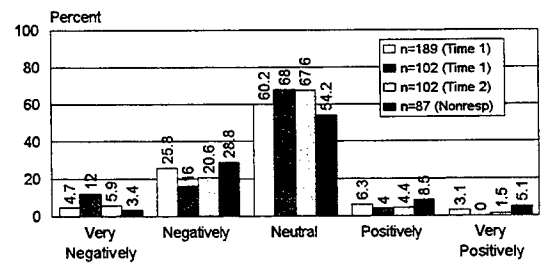
134

How do you think being pregnant will affect your career progression or promotion?



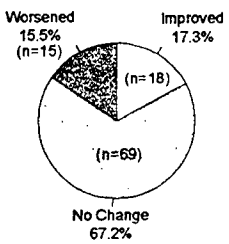
135

How do you think being pregnant will affect your career progression or promotion?



136

Change in Career Opportunities between Time 1 and Time 2 (n=102)



Missing = 48

137

Descriptive Statistics

Variable	Mean	S.D.	Items	Alpha
Coworker	3.8	0.91	6	0.88
Command	3.9	0.93	3	0.85
Preg Support	3.7	1.10	4	0.86
Harassment	4.5	0.70	5	0.84
Well-being	0.59	0.54	53	0.96
Career Opp	2.76	0.79	1	
Turnover	2.81	1.10	1	

138

Correlation Matrix

Coworker Support	1.00	*.91				
Timing careen	0.11	1.00	*.50			
Well-being	- .43	-.08	1.00	*.54		
Career	.16	.13	-.18	1.00	*.79	
Opportunities	.42	.21	-.31	.25	1.00	*1.1
Turnover						

* Standard deviations

139

Model Results

1. Initial Model — Chi-square = 74, df = 3
2. Model 2 — Chi-square = 90, df = 5
   All paths significant
   High residuals 3.4 - 7.9
3. Model 3 — Chi-square = 20, df = 4
   All paths significant
   Moderately high residuals 1.3 - 2.0
4. Final Model — Chi-square = 4.8, df = 2
   All paths significant
   GF I : .99 Delta 1 : .98
   Delta 2 : .99, 99 AIC : 40

140

Total Effects of the Final Model

	Well-being	Preg Timing	Coworker	Preg Career
Coworker	- 0.73	0.00	0.00	0.00
Preg Career	- 0.25	0.18	0.00	0.00
Turnover	- 0.27	0.32	0.39	0.22

141

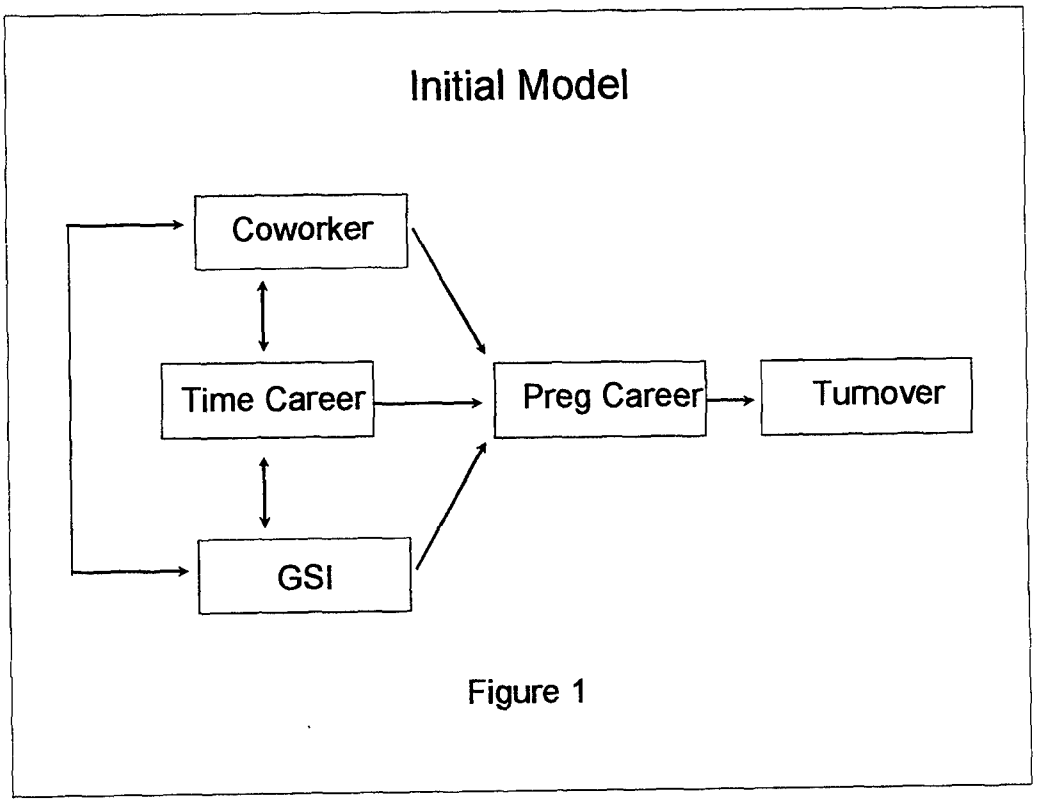


Figure 1

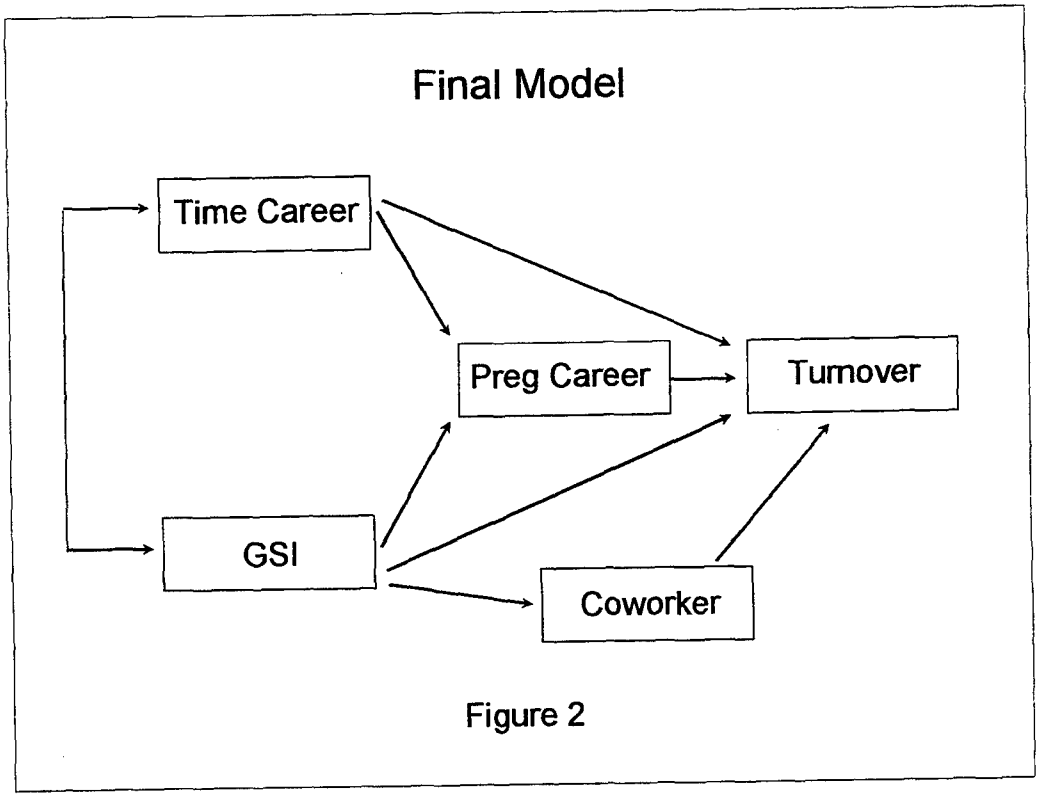


Figure 2

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ABSENCES

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ABSENCES

DESCRIPTIVE DATA	Table #	Page #
HOURS WORKED & ABSENCES	142	91
HOW MANY HOURS PER WEEK DO YOU CURRENTLY WORK?	143	91
HOW MANY HOURS PER WEEK DO YOU CURRENTLY WORK?	144	91
HOURS WORKED PER WEEK, OVER TIME	145	91
HOW MANY DAYS OF WORK DID YOU MISS PER MONTH?	146	91
WORKDAYS ABSENT PER MONTH		
NUMBER	147	92
PERCENT	148	92
WORK DAYS MISSED PER MONTH, OVER TIME	149	92
HOW MANY DAYS A WEEK OF WORK DID YOU MISS SINCE BECOMING PREGNANT?	150	92

ABSENCES

Participants were asked how many hours per week they worked and how many days per month they missed work in the initial and follow-up surveys. Both are indicators of work absences. Descriptive data is provided in Tables 142 to 150.

Hours Worked Per Week

In the total initial sample of 350, 84% reported that they worked 40 hours or more per week. In time one, 92% (n=94) of the follow-up participants reported that they worked 40 hours or more per week. Only 8% (n=8) worked less than 40 hours per week. Of the eight participants that worked less than 40 hours per week at time one, 62% worked at least 40 hours per week at time two. Of the 94 participants that worked at least 40 hours per week at time one, 83% continued to work at least 40 hours at time two. In time two, 81% of the participants worked 40 hours or more per week. Of those that worked less than 40 hours per week, 58% worked at least half time.

Predictors of Hours Worked

Stepwise multiple regression results indicated that education, race, prior maternal medical conditions and current medical conditions were positively associated with number of hours worked in time one. The model F-value was 5.6 with $p > .0002$ and four degrees of freedom. The partial R-squared for education was .03. For ethnicity the partial R-squared was .01. The partial R-squared for prior pregnancy problems was .02. The partial R-squared for current pregnancy problems was .01. Participants with greater education, who were white (nonminority), and had fewer prior and current medical conditions worked more hours per week.

Stepwise multiple regression results indicated that education was positively associated with number of hours worked in time two. The model F-value was 3.9 with $p > .05$ and 1 degree of freedom. The R-squared value was .04.

Work Absences

In the total initial sample of 350, 83% missed one day of work or less a month. Prior to becoming pregnant, 95% missed one day of work or less per month. In the initial survey, 97% of the follow-up participants reported that prior to becoming pregnant they missed one day or less of work per month. Since becoming pregnant, 86% of the participants reported missing one day of work or less a month. At time two, 80% of the participants reported missing one day of work or less per month.

Of the 14 participants that missed more than one day of work per month in time one, 62% reported missing fewer days in time two; 8% reported missing more days in time two; and 30% reported missing the same number of days in time two. Ninety-three percent of the participants missed one day or less a week in time one and 92% in time two.

Predictors of Absences

Stepwise multiple regression results indicated that number of maternal medical conditions, race, and rank predicted work absences at time one for the total initial sample. The partial R-square for medical conditions, race, and rank were .04, .03, and .01, respectively, for a total model R-square of .09. Minority, non-White, participants with a greater number of medical

conditions were more likely to miss work. Higher ranking participants were less likely to be absent. Marital status, parity, age, tenure, education, branch of service, psychological well-being, work climate, pregnancy support, command support, coworker support, and harassment were not significant predictors of work absences.

The model and results for the follow-up sample at time two were different. The model was different because it included longitudinal elements. The time two absence model included medical conditions at time one and time two and work absences at time one. Stepwise multiple regression results indicated that medical conditions at time two and work absences at time one predicted work absences at time two. Work absences at time one accounted for 21% of the variance and time two medical conditions accounted for an additional 3% of the variance in work absences at time two. Marital status, rank, race, parity, age, tenure, education, branch of service, psychological well-being, work climate, pregnancy support, command support, coworker support, and harassment were not significant predictors of work absences.

Work absences at time one was related to race, rank, and medical conditions. Because of this relationship, the inclusion of work absences at time one in the time two model may have overshadowed the effects of race and rank. Alternatively, the follow-up sample was smaller and had proportionally more officers and the effects of race and rank may not have been detected. Medical conditions at time one were first and second term medical conditions of pregnancy. Medical conditions at time two were cumulative medical effects over the entire pregnancy. Clearly time one and time two medical conditions were positively related. The time two medical conditions were more powerful predictors because of the cumulative effect.

Discussion

The majority of participants worked forty hour weeks and missed less than one day a month throughout their pregnancies. From time one to time two there was an increase in the number of participants missing more than one day of work per month and working less than 40 hours of work per week.

Stepwise multiple regression results indicated that better educated, nonminority participants with fewer prior maternal medical conditions and current medical conditions worked more hours. Stepwise multiple regression results indicated that minority participants with a greater number of maternal medical conditions, and junior in rank were more likely to be absent from work. In the longitudinal model of work absences, absences at time one was the primary predictor and maternal medical conditions was a secondary predictor of work absence in time two.

Further discussion of work absences is provided in the sections on turnover and delivery outcomes.

Hours Worked & Absences

142

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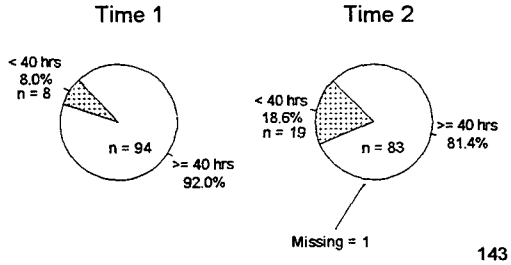
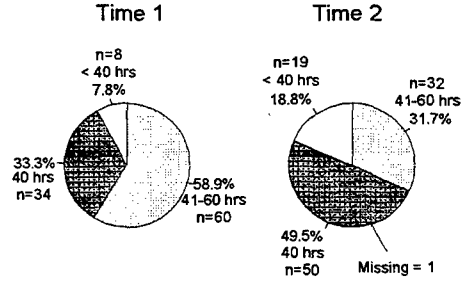
How many hours per week do you CURRENTLY work?
(n = 102)



143

How many hours per week do you CURRENTLY work?
(n = 102)



144

Hours Worked Per Week ,Over Time

Time 1 (n=102)

> 40 hrs n = 8 8 %
40 =>hrs n = 94 92 %

Time 2 (n=8)

Time 2 (n=94)

< 40 hrs n = 3 38 %
40=> hrs n = 5 62 %

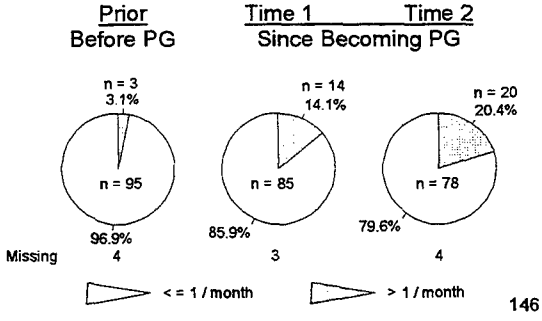
> 40 hrs n =16 17 %
40 =>hrs n =83 83 %

Time 2 (n=16)

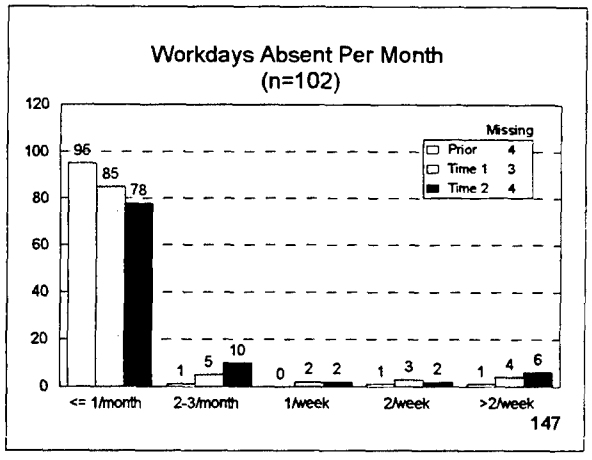
10 hours or less n = 8 50 % (less than half time)
20 - 35 hours n =88 50 % (half time or more)

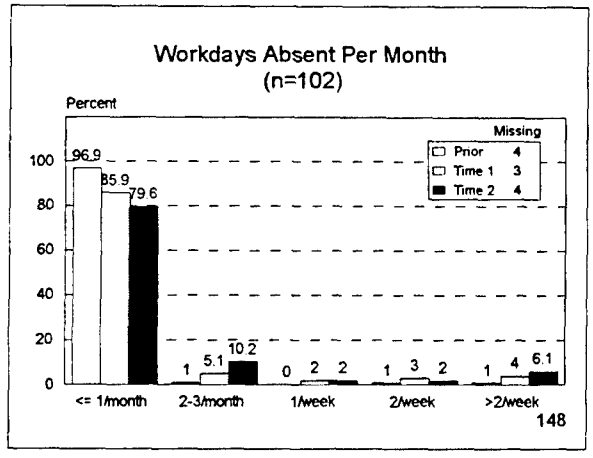
145

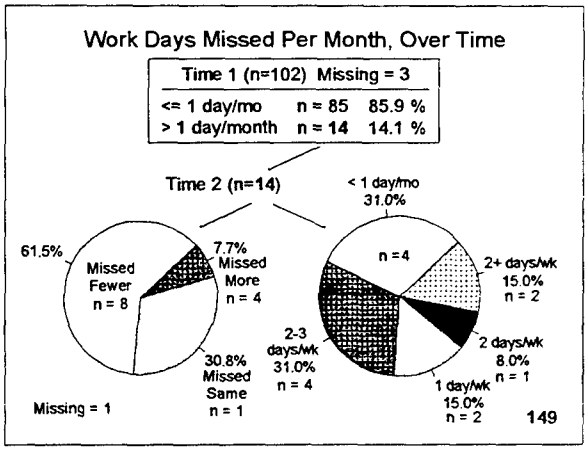
How many DAYS of work did you MISS per month?
(n=102)

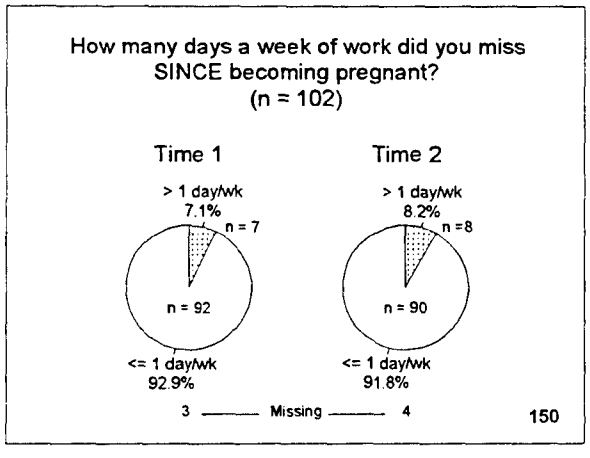


146


Workdays Absent Per Month
(n=102)
120
100
80
60
40
20
0
96
85
78
1
5
10
0
2
2
1
3
2
1
4
6
Missing
Prior 4
Time 1 3
Time 2 4
<= 1/month
2-3/month
1/week
2/week
>2/week
147


Workdays Absent Per Month
(n=102)
Percent
100
80
60
40
20
0
96.9
85.9
79.6
1
5.1
10.2
0
2
2
1
3
2
1
4
6.1
Missing
Prior 4
Time 1 3
Time 2 4
<= 1/month
2-3/month
1/week
2/week
>2/week
148


Work Days Missed Per Month, Over Time
Time 1 (n=102) Missing = 3
<= 1 day/mo n = 85 85.9 %
> 1 day/month n = 14 14.1 %
Time 2 (n=14)
61.5%
Missed Fewer n = 8
7.7% Missed More n = 4
30.8% Missed Same n = 1
Missing = 1
< 1 day/mo 31.0%
n = 4
2+ days/wk 15.0% n = 2
2 days/wk 8.0% n = 1
1 day/wk 15.0% n = 2
2-3 days/wk 31.0% n = 4
149


How many days a week of work did you miss SINCE becoming pregnant?
(n = 102)
Time 1
Time 2
> 1 day/wk 7.1%
n = 7
n = 92
<= 1 day/wk 92.9%
> 1 day/wk 8.2%
n = 8
n = 90
<= 1 day/wk 91.8%
3
Missing
4
150

TURNOVER

filenames:
TURNOVER.PRS
MODELS.PRS

TURNOVER

CAREER INTENTIONS	Table #	Page #
TURNOVER INTENTIONS	151	101
TURNOVER (CAREER) INTENTIONS	152	101
ACTUAL TURNOVER SIX MONTHS AFTER DELIVERY	153	101
TURNOVER INTENTIONS (n=102)	154	101
GESTATION AND TURNOVER INTENTIONS (n=338)	155	101
UNIVARIATE PREDICTORS OF TURNOVER	156	102
MULTI-VARIATE PREDICTORS	157	102
MULTI-VARIABLE PREDICTORS OF TIMECAR/INTENT	158	102
PREDICTORS OF ACTUAL TURNOVER	159	102
STRUCTURAL MODEL	160	102
STANDARDIZED REGRESSION WEIGHTS (SAMPLE 1)	161	103
TOTAL EFFECTS	162	103
STANDARDIZED REGRESSION WEIGHTS (SAMPLE 2)	163	103

CAREER MODELS	Figure #	Page #
MODEL E	3	104
MODEL I	4	104

TURNOVER

Descriptive Statistics

Turnover intention was assessed in the initial survey and actual turnover was assessed approximately six months after delivery. Intent to leave included leaving the service at the end of enlistment and leaving service before the end of enlistment. Intent to stay included: reenlistment, but undecided about career; stay for 20 years; and stay for more than 20 years. Descriptive information is provided in Tables 152 to 155.

Prior to becoming pregnant, 65% of the participants intended to stay and 35% intended to leave. Since becoming pregnant, 59% of the participants intended to stay and 41% intended to leave. Fifty-four percent of the first trimester participants, 53% of the second trimester participants, and 66% of the third trimester participants intended to stay. Forty-six percent of the first trimester participants, 47% of the second trimester participants, and 34% of the third trimester participants intended to leave. For the 102 participants who completed the initial and follow-up surveys, 66% intended to stay prior to pregnancy and 36% intended to stay since becoming pregnant (time one).

Actual turnover data from the Defense Eligibility and Enrollment System database was matched with the initial survey sample by social security number. There were 347 matches for a response rate of 99%. Sixty-six percent of the participants stayed, 1.4% retired, and 33% left. Participants who retired were dropped from further analyses because there were so few (n=5) and because it was unclear whether to categorize them as left or stayed. Retirees leave the organization, but are significantly different from individuals who leave prior to retirement.

The frequency of actual turnover was similar to turnover intentions prior to pregnancy. Frequency of turnover intentions since becoming pregnant was not as closely related to actual turnover. The frequency of turnover intentions by trimester of pregnancy showed a difference between turnover intentions for the first two trimesters of pregnancy and the third trimester of pregnancy. This may explain why turnover intentions since becoming pregnant were not as closely related to actual turnover intentions as turnover intentions prior to becoming pregnant.

Demographic Predictors

Demographic predictors of prior turnover intentions, turnover intentions, and actual turnover were assessed using univariate and multivariate statistical methods (Tables 156 to 160). Rank, age, marital status, branch of service, tenure, ethnicity, education, housing, maternal medical conditions, parity, and gestation were hypothesized to differentiate turnover intentions and turnover.

Univariate Regression and Analysis of Variance results indicated that rank, age, marital status, branch of service, housing, tenure, and education were significantly related to prior turnover intentions. Ethnicity, maternal medical conditions, and parity were not significantly related to prior turnover intentions (Table 156).

Univariate Regression and Analysis of Variance results indicated that rank, age, marital status, branch of service, tenure, and education were significantly related to turnover intentions. Ethnicity, maternal medical conditions, and parity were not significantly related to turnover intentions (Table 156).

Univariate Regression and Analysis of Variance results indicated that rank, marital status, branch of service, ethnicity, and maternal medical conditions were significantly related to actual turnover. Age, tenure, education, and parity were not significantly related to actual turnover (Table 156).

Stepwise multiple regression was used to assess the simultaneous effects of rank, age, marital status, branch of service, tenure, ethnicity, education, maternal medical conditions, parity, and gestation on prior turnover intentions and turnover intentions. Tenure and grade accounted for 30% of the variance in prior turnover intentions. No other variables met the significance level for entry into the model. Tenure, grade, and ethnicity accounted for 33% of the variance in turnover intentions. No other variables met the significance level for entry into the model. Higher ranking, nonminority participants with longer tenure were more likely to intend to stay in the organization (Table 157).

Stepwise logistic regression was used to assess the simultaneous effect of rank, age, marital status, branch of service, tenure, ethnicity, education, maternal medical conditions, parity, and gestation on actual turnover. Rank, marital status, and ethnicity predicted actual turnover. The odd ratios were .62, 2.2, and .60 with upper and lower confidence intervals of .48-.81, 1.2-4.1, and .36-.99. Junior ranking, married, minority participants were more likely to leave the organization (Table 157).

Other Predictors of Turnover Intentions

Stepwise multiple regression was used to assess different successive models of the predictors of turnover intentions (Table 158). Each model began with the forced entry of significant demographic variables: tenure, rank, and race.

In the first model pregnancy planning, timing and absence variables were added. These variables were added because we hypothesized that participants who planned their pregnancies in conjunction with their career were more likely to stay. We also hypothesized that planning had a relationship with hours worked and days missed per month. Participants who planned their pregnancies were thought to be more consistent or stable and would continue to work and work consistently while pregnant. We also thought that hours worked and days missed were behaviors related to turnover intentions. Participants who worked less hours and less days, may be transitioning and withdrawing from work with the intent to leave the organization.

Tenure, rank, race, number of days missed per month, timing in career, and pregnancy planning were significant and accounted for 37% of the variance in turnover intentions. Timing of pregnancy and hours worked per week were not retained in the model.

In the second model psychological well-being was added to the results of the first model. Psychological well-being was added to the model because we hypothesized that psychologically healthy participants were more likely to intend to stay. Psychologically stressed participants may seek to reduce their stress by leaving the military and returning home to a more stable or familiar environment. Tenure, rank, race, days missed per month, psychological well-being, pregnancy planning, and timing in career were significant and accounted for 39% of the variance in turnover intentions. Psychological well-being was the fifth variable added to the model and the partial R-squared was .01 with an F-value of 5.2, $p > .02$.

In the third model prior turnover intention was added. The total model accounted for 67% of the variance in turnover intentions. The demographics were significant and accounted for 34% of the variance. The partial R-squared for prior turnover intentions was .29 with

p>.0001. Psychological well-being, timing in career, days missed per month, and pregnancy planning were significant and accounted for 5% of the variance.

In the fourth model work climate measures were added. We hypothesized that participants who felt support for their pregnancies from their coworkers and commanders would experience less stress from work and would be more likely to stay in the organization. Tenure, rank, race, days missed per month, pregnancy planning, and coworker support were significant and accounted for 43% of the variance in turnover intentions. Psychological well-being and timing in career dropped out of the model. The partial R-squared for coworker support was .03. P > .0001.

Work climate and psychological well-being measures were significantly intercorrelated and could not be included in a single linear regression model predicting turnover intentions. Psychological well-being was dropped and the model was retested. The demographics were significant and accounted for 35% of the variance. The partial R-squared for coworker support was .05, p> .001. Pregnancy planning, days missed, and timing in career accounted for an additional 3% of the variance in turnover. The total model accounted for 43% of the variance.

Prior turnover intention was added to the model. The demographics were significant and accounted for 34% of the variance. The partial R-squared for prior turnover intentions was .30 p>.0001. Coworker support, command support, pregnancy planning, and days missed per month, were significant and accounted for 4% of the variance. The total model accounted for 68% of the variance in turnover intentions.

A comparison of the model with psychological well-being included and work climate measures excluded and the model with work climate measures included and psychological well-being excluded showed that both models accounted for about 68% of the variance. Tenure, rank, and race accounted for about 35% of the variance in both models. Days missed per month, pregnancy planning and timing were significant in both models. The data indicate that either psychological well-being or work climate measures can be used to predict turnover intentions, but not both in the same model.

Predictors of Actual Turnover

Rank, marital status and ethnicity were entered first as a block in the stepwise logistic regression model predicting actual turnover (Tables 159). Pregnancy planning, pregnancy timing, work absences, and psychological health were added and were not significant. The odds ratios for rank, marital status and ethnicity were .43, 2.4, and .56 with 95% confidence intervals of .22-.83, 1.2-4.7, and .32-.96, respectively.

In the alternative model, rank, marital status and ethnicity were entered as a block and then the work climate measures were added in a stepwise logistic regression model predicting actual turnover. The work climate measures were not significant.

In a third model, turnover intention was added after the block of demographic variables to predict turnover. Turnover intention was significant with an odds ratio of .50 and 95% confidence intervals from .47 to .77. Rank and ethnicity were no longer significant predictors of turnover. Marital status was significant with an odds ratio of 2.1 with 95% confidence intervals from 1.1 to 3.9. Married individuals with intentions to stay in the organization were more likely to stay six months after delivery.

In a fourth model longitudinal turnover intentions were modeled. Individuals who intended to leave prior and at time one were coded as group one. Individuals who intended to

reenlist prior and at time one intended to leave were coded as group two. Individuals who intended to leave prior and intended to stay at time one were coded as group three. Individuals who intended to reenlist prior and intended to stay at time one were coded as four. Individuals who intended to stay prior and at time one intended to leave were coded as five. Individuals who intended to stay prior and at time one were coded as six.

A probit regression method was used to assess the effects of rank, marital status, ethnicity and longitudinal turnover intention groups on actual turnover. The results indicated that rank and ethnicity did not predict actual turnover and there was no significant difference between group three and four. Groups three and four were collapsed into one group.

Logistic regression was used to further test the effects of longitudinal turnover intention group differences and marital status on actual turnover. The odds ratios for martial status and turnover intention groups were 2 and .72 with 95% confidence intervals of 1.1-3.7 and .62 to .84, respectively.

Delivery Outcomes and Turnover

Chi-squared analysis was used to assess the relationships between baby complications and prior turnover intentions, turnover intentions at time one, and actual turnover six months after delivery. Prior turnover intentions, turnover intentions at time one, and actual turnover were not significantly related to baby complications in either the total or follow-up samples.

For the total initial sample, the Chi-squared value for baby complications and prior turnover intentions was 3.4 with a probability of .34. The Chi-squared value for baby complications and turnover intentions at time one was 4.6 with a probability of .34. The Chi-squared value was nearly significant for baby complications and actual turnover, 3.2 with a probability of .07.

For the follow-up sample, the Chi-squared value for baby complications and prior turnover intentions was 5.9 with a probability of .11. The Chi-squared value for baby complications and turnover intentions at time one was 2.5 with a probability of .64. The Chi-squared value for baby complications and turnover was 2 with a probability of .15.

Covariance Structural Models of Turnover

Time one survey data was randomly split into two. The first sample of data (n=172) was used to model and test turnover models. The second sample of data (n=173) was used to cross validate the models tested with the first sample of data. A random number generator in SAS was used to split the data.

Actual turnover could not be used as the dependent variable in the covariance structural models because it was a categorical variable, individuals either stayed or left the organization. Turnover intentions was substituted for actual turnover in the covariance structural models because actual turnover was highly correlated with turnover intentions and because turnover intentions was an interval scale variable.

The initial model of turnover included demographic variables as independent predictors of turnover. The alternative model included demographic variables as intercorrelated predictors of turnover. Demographic variables included rank, age, tenure, education, ethnicity, marital status, parity, pregnancy planning, and career timing.

Paths from education, ethnicity, and marital status were not significant in either model and the variables were dropped. In the modified models, age, parity, and career timing were not

significant. Residual covariances and modification indices in the uncorrelated predictors model were significant and indicated that the predictors should be correlated. The uncorrelated predictor model was dropped. Theoretically, the correlated predictor model was consistent with our hypotheses that demographic characteristics were interrelated.

In model C age, parity, and career timing were dropped because they were not significant and the remaining demographics were modeled as intercorrelated. In the final demographic model rank, tenure, and pregnancy planning were intercorrelated and predicted turnover. The standardized regression weights for rank, tenure, and planning were .31, .41, and .14. The intercorrelations were all significant. The correlations were -.21 for tenure and planning; -.30 for rank and planning; and .40 for rank and tenure. The demographic model served as the base for subsequent models.

Because previous results indicated that psychological well-being and work climate measures were potentially incompatible in a single model, alternate models excluding and including the two set of measures were proposed and tested. Because the inclusive model was identified and a maximum likelihood solution was produced, the alternative models were unnecessary and were dropped.

In model E (Figure 3) work climate was modeled as a higher order factor with pregnancy support, command support, and worker support as first order factors. Health was modeled as a higher order factor with medical problems and psychological health as first order factors. Rank and tenure predicted work climate, prior turnover intentions, and turnover. Pregnancy planning, work climate, and health predicted turnover. The Chi-squared difference test was not significant. Paths from pregnancy planning and rank to turnover were not significant. All other paths were significant.

Pregnancy planning was dropped from the model and the path from rank to turnover was eliminated in model F. The model was retested and the path from tenure to turnover was not significant.

In model G the path from tenure to turnover was dropped and the model was retested. All paths were significant and the Chi-squared value was significant. Residuals and modification indices suggested adding paths between work climate and health. Both were theoretically justified.

In model H, paths were added from work climate to health and from health to work climate. The path from health to work climate was not significant and was dropped in Model I. The Chi-squared value for the final model was significant. The value was 20 with $p > .57$ and 22 degrees of freedom. All paths were significant (Table 161). Residual covariances were small with a range from .01 to 1.4. Total effects of the model are listed in Table 162. Prior turnover intentions had the greatest direct effect on turnover, followed by work climate and health.

The model was cross validated with the hold-out sample of data. The Chi-squared value was 37 with $p > .03$ and 22 degrees of freedom. The path from health to medical problems was not significant. The estimate was .57 with a critical ratio of 1.5. Subsequently, the path from health to turnover was not significant. The estimate was -.15 with a critical ratio of -.88. All other paths were significant (Tables 163).

Discussion

The majority of the participants intended to stay in the organization prior to pregnancy and during pregnancy. Turnover intention was positively associated with actual turnover six months after delivery. Neither actual turnover nor turnover intentions were significantly related to baby outcomes.

Demographic variables were significant predictors of turnover intentions and turnover. Rank in the organization predicted prior turnover intentions, turnover intentions during pregnancy, and actual turnover. Higher ranking individuals had greater intentions to stay and were more likely to stay in the organization. Tenure predicted prior turnover intentions and turnover intentions during pregnancy, but not actual turnover. Individuals with greater tenure intended to stay in the organization, but did not necessarily actually stay. Ethnicity predicted turnover intentions during pregnancy and actual turnover. White participants had greater intentions to stay and were more likely to stay in the organization. Married participants were more likely to stay.

A comparison of the model with psychological well-being included and work climate measures excluded and the model with work climate measures included and psychological well-being excluded showed that both models accounted for equal variance in turnover intentions. Tenure, rank, and race accounted for about 35% of the variance in both models. Days missed per month, pregnancy planning and timing were significant in both models. The data indicate that either psychological well-being or work climate measures can be used to predict turnover intentions, but not both in the same model. This finding was the basis for setting up competing structural models of turnover.

Marital status and turnover intentions predicted actual turnover. Neither psychological health nor work climate were significantly related to turnover. Longitudinal changes in turnover intentions and marital status predicted turnover. Married individuals with prior and current intentions to stay were more likely to stay in the organization.

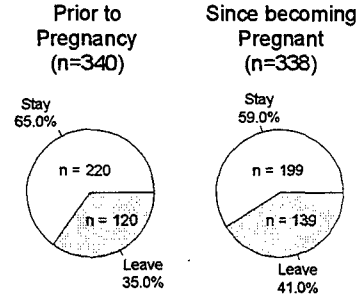
The most rigorous test of the predictors of turnover was the competing covariance structural models. Rank and tenure were the demographic variables retained in the model predicting turnover. Neither had direct effects on turnover, but rather influenced turnover indirectly through other variables. Prior turnover intentions, work climate, and health directly affected turnover. Individuals with intentions to stay in the organization, individuals who reported positive work climates, and individuals with fewer health conditions were more likely to stay.

The cross validation did not completely confirm the final model. In the hold-out sample the health measure was not confirmed. Medical problems and psychological health did not load on the higher order factor and subsequently did not predict turnover. This problem may have been due to random sampling error. Further research is needed to validate the model.

TURNOVER INTENTIONS

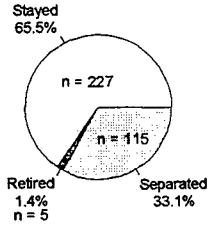
151

Turnover (Career) Intentions



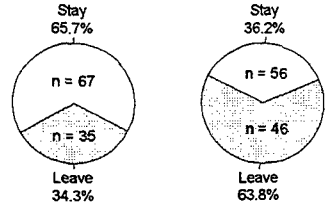
152

Actual Turnover Six Months After Delivery
(per DEERS database)
(n = 347)



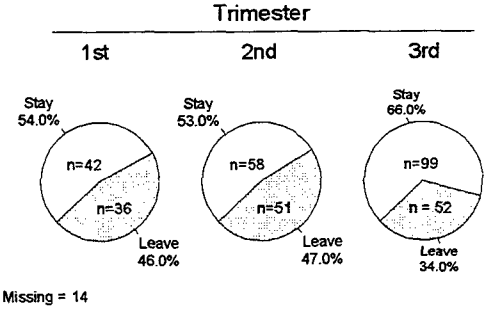
153

Turnover Intentions
(n=102)



154

Gestation by Turnover Intentions
(n=352)



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155

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Univariate Predictors of Turnover

	Prior Turnover Intent	Turnover Intent	Actual Turnover
Pay Grade	+	+	+
Age	+	+	NS
Tenure	+	+	NS
Education	+	+	NS
Ethnicity	NS	NS	+
Marital Status	+	+	+
Branch	+	+	+
Parity	NS	NS	NS
Med Conditions	NS	NS	+
Gestation	NS	NS	NI
Housing	+	NS	NS

+ = positive association
NS = not significant
NI = not included

156

Stepwise Multivariate Predictors

	Prior Turnover Intent	Turnover Intent	Actual Turnover
Pay Grade	+	+	+
Age	NS	NS	NS
Tenure	+	+	NS
Education	NS	NS	NS
Ethnicity	NS	+	+
Marital Status	NS	NS	+
Branch	NS	NS	NS
Parity	NS	NS	NS
Med Conditions	NS	NS	NS
Gestation	NS	NS	NS
Housing	NS	NS	NS

+ = positive association
NS = not significant

157

Stepwise Model of Turnover Intent

Model #	1	2	3	4	5	6
Pay Grade	+	+	+	+	+	+
Tenure	+	+	+	+	+	+
Ethnicity	+	+	+	+	+	+
Planning	+	+	+	+	+	+
Timing career	+	+	+	NS	NI	NI
Miss	+	+	+	+	+	+
Hours	NS	NI	NI	NI	NI	NI
Timing	NS	NI	NI	NI	NI	NI
Well-being	NI	+	+	NS	NI	NI
Prior Turnover	NI	NI	+	NI	NI	+
Coworker Sup	NI	NI	NI	+	+	+
Cmd Support	NI	NI	NI	NS	NS	+
Preg Support	NI	NI	NI	NS	NS	NI
Harassment	NI	NI	NI	NS	NS	NI

+ = positive association
NS = not significant
NI = not included

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Predictors of Actual Turnover

Model #	1	2	3	4
Pay Grade	+	+	NS	NS
Ethnicity	+	+	NS	NS
Marital Status	+	+	+	+
Planning	NS	NS	NI	NI
Timing	NS	NS	NI	NI
Miss	NS	NS	NI	NI
Well-being	NS	NI	NI	NI
Cmd Support	NI	NS	NI	NI
Preg Support	NI	NS	NI	NI
Coworker Sup	NI	NS	NI	NI
Harassment	NI	NS	NI	NI
Turnover Intent	NI	NI	+	NI
Long Turnovr Intent	NI	NI	NI	+

+ = positive association
NS = not significant
NI = not included

159

Structural Model
Demographic Predictors of Turnover

	(Uncorrelated) Model A	(Correlated) Model B	(Correlated) Model C
Pay Grade	+	+	+
Age	NS	NS	NI
Tenure	+	+	+
Education	NS	NS	NI
Ethnicity	NS	NS	NI
Marital Status	NS	NS	NI
Parity	NS	NS	NI
Planning	+	+	+
Timing	NS	NS	NI

+ = positive association
NS = not significant
NI = not included

160

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STANDARDIZED REGRESSION WEIGHTS

Sample 1

			Estimate	C.R.
WCLIM	←	GRADE	0.294	3.530
WCLIM	←	TENURE	0.241	2.921
PTURN	←	GRADE	0.238	3.295
PTURN	←	TENURE	0.355	4.910
HEALTHY	←	WCLIM	- 0.530	- 3.545
PGSUP	←	WCLIM	0.797	
COWORK	←	WCLIM	0.820	10.963
COMSUP	←	WCLIM	0.824	11.008
TURN	←	WCLIM	0.276	4.215
TURN	←	PTURN	0.667	14.697
MEDPROB	←	HEALTHY	0.515	
PSYCH	←	HEALTHY	0.913	4.049
TURN	←	HEALTHY	- 0.136	- 2.137

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TOTAL EFFECTS

	TENURE	GRADE	WCLIM	HEALTHY	PTURN
WCLIM	0.235	0.053	0.000	0.000	0.000
HEALTHY	- 0.080	- 0.018	- 0.342	0.000	0.000
PTURN	0.378	0.047	0.000	0.000	0.000
PSYCH	- 0.070	- 0.016	- 0.298	0.872	0.000
MEDPROB	- 0.080	- 0.018	- 0.342	1.000	0.000
COWORK	0.196	0.044	0.833	0.000	0.000
SOMSUP	0.214	0.048	0.912	0.000	0.000
PGSUP	0.235	0.053	1.000	0.000	0.000
TURN	0.389	0.058	0.434	- 0.262	0.758

162

STANDARDIZED REGRESSION WEIGHTS

Sample 2

			Estimate	C.R.
WCLIM	←	GRADE	0.358	4.351
WCLIM	←	TENURE	0.176	2.181
PTURN	←	GRADE	0.274	3.971
PTURN	←	TENURE	0.390	5.663
HEALTHY	←	WCLIM	- 0.498	- 5.794
PGSUP	←	WCLIM	0.841	
COWORK	←	WCLIM	0.800	11.478
COMSUP	←	WCLIM	0.835	11.974
TURN	←	WCLIM	0.158	2.530
TURN	←	PTURN	0.769	17.764
MEDPROB	←	HEALTHY	0.233	1.495
PSYCH	←	HEALTHY	0.902	
TURN	←	HEALTHY	- 0.069	- 0.879

163

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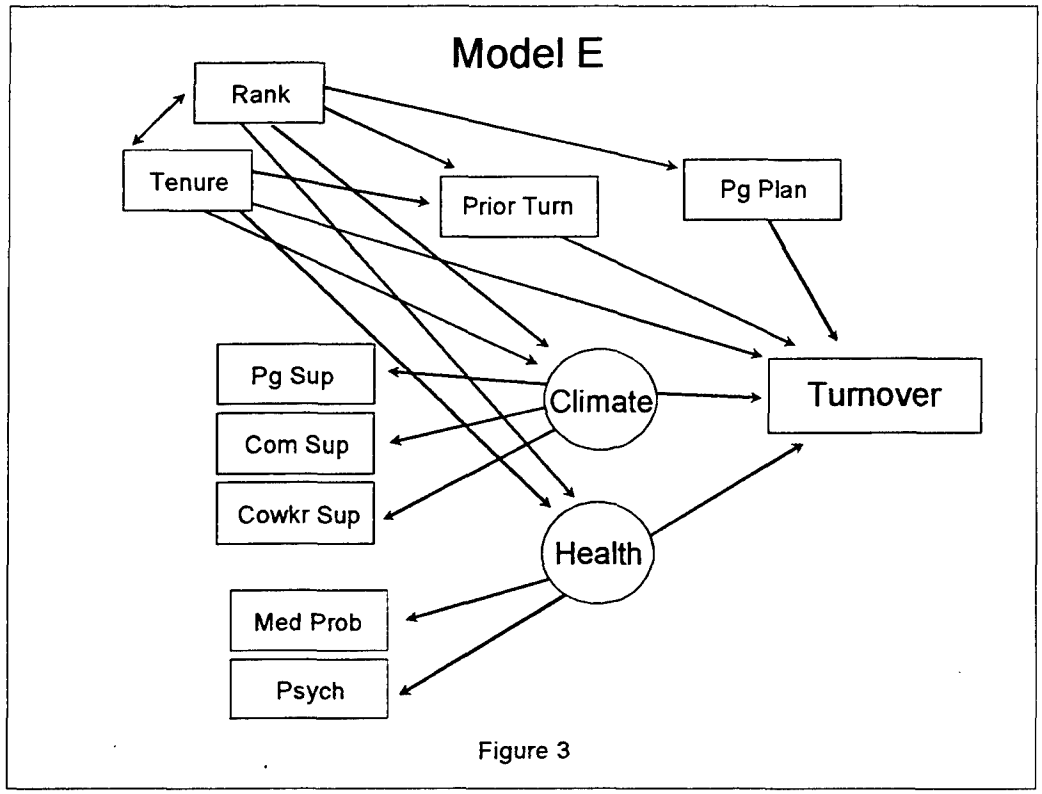

Figure 3

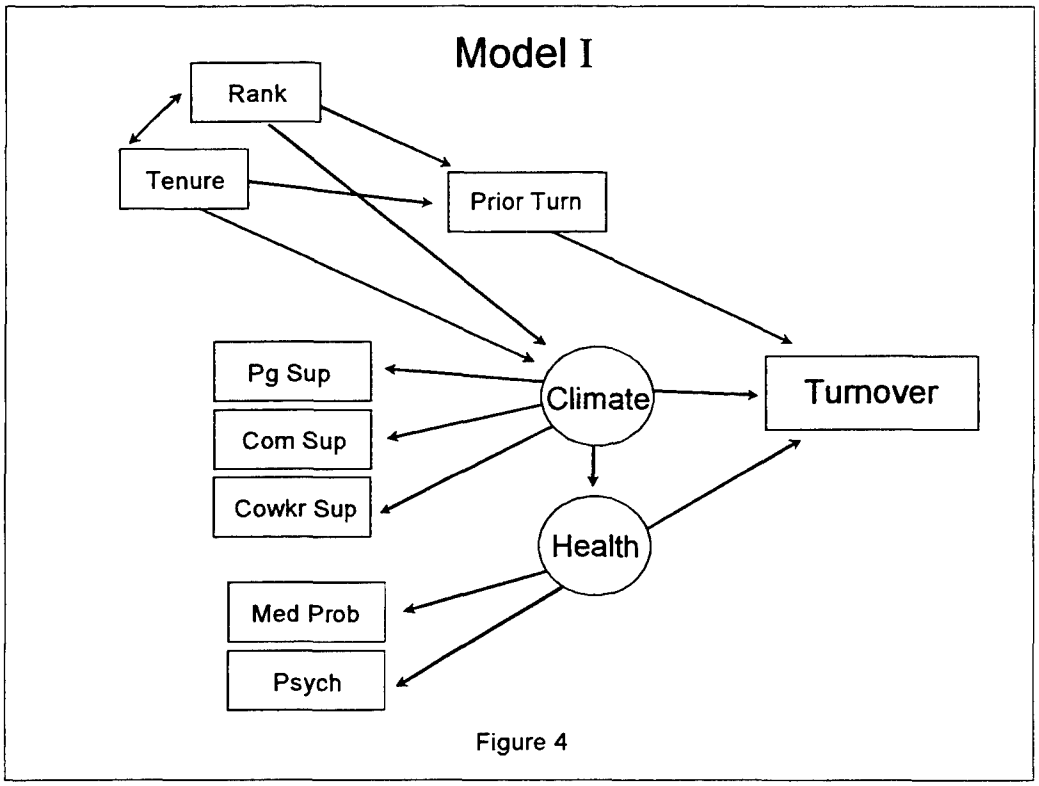

Figure 4

DELIVERY OUTCOMES

filenames:
DELIVLOG.PRS
UNIVARIAT.PRS

DELIVERY OUTCOMES

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DELIVERY OUTCOMES

Infant and maternal delivery outcome measures came from two separate but related data sources. The first data source was delivery logs that were completed for each participant by a medical provider in each facility. Delivery log data was not available for participants who delivered in other medical facilities. Participants delivered in other medical facilities because they moved, had private insurance, left the military, or chose to deliver elsewhere. See Appendix A for a complete list of the items in the delivery log.

The Standard Inpatient Data Record (SIDR) database was the second source of delivery outcome data. The SIDR database is an electronic record of inpatient diagnosis related group codes (DRG), procedure codes, and cost data. Data for participants was retrieved from this database based on social security number. SIDR data was not available for participants that did not provide social security numbers or provided invalid social security numbers. Delivery outcomes (DRGs) provided in the SIDR were reviewed and were coded as either complicated or not complicated for mother and baby.

To ascertain the maximum number of delivery outcomes, delivery outcome information from the SIDR database and delivery log database were combined using social security numbers. There were 289 SIDR mother records, 270 SIDR baby records, and 283 delivery log records. It was unclear why the number of mother and baby records did not match in the SIDR database. One possibility was that baby records were not generated when there was a miscarriage. However, this does not account for the difference because there were only a few miscarriages. Furthermore, ICD-9 codes for some mothers indicated that the mother delivered a healthy newborn, but a baby record was absent.

When a live birth ICD-9 code existed for the mother and the baby record was absent, a code for the baby was created based on the information provided in the mother's record. Conversely, when a live birth ICD-9 code existed for the baby and the mother's record was absent, a code for the mother was created based on the information provided in the baby's record.

Delivery outcomes provided in the delivery log records were reviewed and were coded consistent with ICD-9 codes as either complicated or not complicated for mother and baby. Complications were matched to DRGs and included low birth weight, preterm delivery, growth retardation, rupture of uterus, etc. Delivery log data was substituted if SIDR data was absent.

Combined records from the two data sources resulted in delivery outcome measures for 320 participants for a response rate of 92%. A list of DRGs is provided in Table 165. Descriptive information from the delivery logs for the entire sample is provided in Tables 166 to 196.

Sixty-five percent of the infants and 73% of the mothers had no complications. Eighteen percent of the participants had preterm deliveries, 60% had full-term deliveries, and 22% were overdue. Forty-eight percent had assisted rupture of membranes. Sixty-two percent were induced into labor. Thirty-eight percent had meconium. Sixty-eight percent had vaginal deliveries, 15% had cesarean sections, 9% had forceps used in delivery, and 5% had vacuum assisted deliveries. In 5% of the deliveries the infant was in a breach presentation. Forty-nine percent of the babies were male.

Pitocin usage was varied. Sixteen percent were induced with pitocin, 19% were augmented with pitocin, 38% were not administered pitocin, and 27% were administered pitocin, but the use was unspecified. Fifty-three percent of the participants had an episiotomy and 16% had lacerations. Sixty-five percent delivered complete placentas, .6% delivered fragmented placentas, and 34% delivered undetermined placentas that were sent to the laboratory. Eighty percent had epidural anesthesia, 7% had spinal caudal anesthesia, 1% had general anesthesia, 9% had local anesthesia, 2% had phenergan and/or nubain, and 3% had no anesthesia. Six percent of the deliveries were low birth weight (less than 2500 grams) and 11% had birth weights between 2500 and 3000 grams. At one minute, 34% had APGAR scores of 9 or 10; 44% had an APGAR of 8; and 12% had an APGAR of 7; and 10% had APGAR scores less than 7. At five minutes, 80% had APGAR scores of 9 or 10; 14% had an APGAR of 8; and 3% had an APGAR of 7; and 2% had APGAR scores less than 7.

There were ninety participants who completed the time one and time two surveys and had delivery log data. Descriptive information from the delivery logs for the follow-up sample is provided in Tables 198 to 224.

Follow-up participants were a little less likely to have maternal or infant complications. Follow-up participants were about as likely to have preterm deliveries (17% compared to 18%). Follow-up participants were more likely to have assisted rupture of membranes (62% compared to 49%). Follow-up participants were equally likely (16%) to have mechonium. Follow-up participants were somewhat less likely to be induced (14% compared to 16%). Follow-up participants were about as likely to have an episiotomy (35% compared to 33%) and lacerations (18% compared to 16%). Follow-up participants were about as likely to have spontaneous delivery of the placenta (88% compared to 85%). Follow-up participants were about as likely to have a vaginal delivery (69% compared to 68%) and to have a boy (50% compared to 49%). Follow-up participants were about as likely to have extremely low birth weight infants (7% compared to 6%) and were more likely to have infant birth weights between 2500-3000 grams (16% compared to 11%). At one minute, 32% of the follow-up participant infant APGAR scores were 9; 47% APGAR scores were 8; 13% were 7; and 9% were less than 7. At five minutes, 83% of the follow-up participant infant APGAR scores were 9 or 10; 13% APGAR scores were 8; 2% were 7; and 2% were less than 7.

Demographics and Planning as Predictors of Infant Complications

Chi-squared analysis was used to assess univariate predictors of infant complications because the dependent variable was categorical. Independent variables were rank (military pay grade), age, tenure, marital status, branch of service, ethnicity, education, pregnancy planning, pregnancy timing, pregnancy timing in career, site, and parity. Descriptive information is provided in Tables 253 to 277.

The chi-squared analysis indicated that there were no significant differences in rank and infant complications. Rank was divided into four categories (junior enlisted, NCOs, company grade officers, and field grade officers) and divided into two categories (enlisted and officers). Ethnicity was not significantly related to infant complications. Ethnicity was divided into five categories (White, Black, Hispanic, Asian and other) and into two categories (White and Black). Chi-squared analysis indicated that there were no significant differences in age, tenure, marital status, branch of service, education, site of care, or parity and infant complications. Pregnancy

planning, pregnancy timing, and timing of pregnancy in career did not significantly differentiate infant complications.

To further examine the effects of advance maternal age on delivery outcomes the sample was partitioned into women over 35 years old and 35 years and younger and Chi-squared and logistic regression techniques were used. Women over the age of 35 were not more likely to have adverse birth outcomes. The sample was then partitioned into women over 38 years old and no significant differences were found. Military service with the physical and health requirements may provide a protective effect for older women having healthy babies. Alternatively, the military excludes unhealthy women.

Stepwise multivariate logistic regression results indicated that rank, age, tenure, marital status, branch of service, site of care, ethnicity, education, and parity did not predict infant complications. Probit regression that is less powerful than logistic regression indicated that rank was significantly related to infant complications. The overall Chi-squared test was not significant for rank.

Rank, marital status, and race variables were then used to group the data. Neither the 3 X 3 groups nor any of the 2 X 2 groups predicted infant complications using logistic regression. Probit regression results indicated that white, married, officers were significantly different from all other groups. White, married, officers were significantly less likely to have infant complications than all other groups.

Demographics and Planning as Predictors of Maternal Complications

Chi-squared analysis was used to assess univariate predictors of maternal complications because the dependent variable was categorical. Independent variables were rank (military pay grade), age, tenure, marital status, branch of service, ethnicity, education, pregnancy planning, pregnancy timing, pregnancy timing in career, site, and parity. Descriptive information is provided in Tables 253 to 277.

The chi-squared analysis indicated that there were no significant differences in rank and maternal complications. Rank was divided into four categories (junior enlisted, NCOs, company grade officers, and field grade officers) and divided into two categories (enlisted and officers). Ethnicity was not significantly related to maternal complications. Ethnicity was divided into five categories (White, Black, Hispanic, Asian and other) and into two categories (White and Black). Chi-squared analysis indicated that there were no significant differences in age, tenure, marital status, branch of service, education, site of care, or parity and maternal complications. Pregnancy planning, pregnancy timing, and timing of pregnancy in career did not significantly differentiate maternal complications.

Stepwise multivariate logistic regression results indicated that rank, age, tenure, marital status, branch of service, site of care, ethnicity, education, and parity did not predict maternal complications. Rank, marital status, and race variables were then used to group the data. Neither the 3 X 3 groups nor any of the 2 X 2 groups predicted maternal complications using logistic regression.

Health and Work Climate as Predictors of Infant Complications

Maternal medical conditions, psychological health, and work climate measures during the third trimester of pregnancy were used in the analyses. There were 246 participants with third trimester data for each of the variables.

Recoding was necessary because of the number of empty or nearly empty cells. Psychological health was recoded to fit the logistic regression model. Psychological health scores in the first two quartiles were recoded to one. Psychological health scores in the third quartile were recoded as two, and scores in the fourth quartile were recoded as three. Work climate was a composite score calculated from scores on the measures of pregnancy support, command support, and coworker support. Work climate was recoded to fit the logistic model. Scores less than two were recoded to one; scores greater than or equal to two, but less than three were recoded as two; scores greater than or equal to three but less than four were recoded as three; scores equal to four and less than five were recoded as four.

Demographic variables, maternal medical conditions, psychological health, and work climate measures were entered into a stepwise logistic regression model predicting infant complications. None of the demographic variables were significant. Demographic variables were then forced into the model in different blocks and none were significant. Medical conditions and psychological health were nearly significant. Work climate was a significant predictor of infant complications. The odds ratio for climate was .67 with 95% confidence intervals of .46 to .97 in the model with demographics, medical conditions, and psychological health.

Because medical conditions and psychological health were highly correlated and because we hypothesized that both were indicators of health, medical conditions and psychological health were combined into a single composite measure of health. Demographics, health, and work climate were then entered into a stepwise logistic regression model predicting infant complications. None of the demographic variables were significant. Both health and work climate were significant predictors. Demographics were dropped from the model. The odds ratio for work climate was 1.5 with lower and upper 95% confidence intervals of 1.1 to 2.1. The odds ratio for health was .75 with lower and upper 95% confidence intervals of .58 to .96. Participants with fewer health conditions and better work climates were more likely to have healthy babies.

Longitudinal Predictors of Delivery Outcomes

The second sample analyzed was data collected from 102 participants in the two time periods. Participants who did not provide complete information for each of the measures were excluded and reduced the sample size to 96.

Difference scores were calculated by subtracting raw scores on medical conditions, psychological health, and work climate at time one from time two. Change scores on psychological well-being ranged from -0.98 to 2.19 with as little change as 0.01. The wide range of difference scores resulted in a number of nearly empty cells in the logistic model. Following the recommendations of Hosmer and Lemeshow (1989) scores were collapsed. Difference scores between -0.25 and 0.25 were collapsed into the no change group and were coded as zero.

The difference scores for each measure were then entered simultaneously into a logistic regression model predicting delivery outcome. Results indicated that only psychological well-being was significant (Chi-square=4.0, $p > 0.04$). Medical conditions (Chi-square=0.08, $p > 0.77$) and work climate (Chi-square=2.1, $p > 0.15$) were not significant predictors of delivery outcome. The odds ratio for psychological well-being was 3.6.

We then combined the measures of medical problems and psychological symptoms consistent with the logic used in analyzing the previous sample data. The results indicated that the health measure (Chi-square=0.7, p. 0.4) and the work climate measure (Chi-square=1.4, p. 0.2) were not significant.

In summary, changes in psychological health over time predicted delivery outcomes such that participants with increased psychological symptoms were more likely to experience adverse birth outcomes. Changes in maternal medical conditions and work climate over time did not predict delivery outcomes.

Discussion

Our primary hypothesis about the effects of biopsychosocial factors in delivery outcomes was confirmed. As predicted, women with a greater number of medical conditions and psychological symptoms, who worked in less supportive work climates were more likely to experience adverse delivery outcomes. Our hypothesis regarding the contribution of changes in biopsychosocial factors over the course of pregnancy was not fully supported. While changes in psychological well-being predicted delivery outcomes, changes in medical conditions and work support were not significant predictors of delivery outcomes. Contrary to past research findings and our hypotheses, demographic characteristics such as rank, marital status, race, and parity did not differentiate delivery outcomes.

Demographics may not have differentiated delivery outcomes in this sample because the sample was fairly homogenous. All participants were employed and had access to health care. These two factors may have eliminated, compensated for or reduced the effects of demographics in delivery outcomes.

The results of this study demonstrate that medical conditions and psychological symptoms are interrelated and indicate the general health of the pregnant woman. This finding is consistent with Lazarus & Folkman's (1984) theory that psychological distress is influenced by a complex interplay of psychological, social, cultural, work, and biological factors. Medical conditions may be a result of and/or contribute to psychological symptoms and vice-versa. For example, a pregnant woman who has gestational diabetes and must adjust her nutritional habits dramatically or confront an increased risk for adverse fetal outcomes may as a result experience increased psychological distress. Alternatively, a pregnant woman who is psychologically distressed due to depression may not have good nutritional, sleep, or exercise habits that may contribute to the onset of gestational diabetes.

Individually, the Chi-square value for medical conditions was 4.6 with $p > 0.03$ and for psychological well-being was 2.1 with $p > 0.15$. In combination the Chi-square value more than doubled to 8.1 with $p > 0.004$. A comparison of the individual and combined Chi-square values for psychological well-being and medical conditions supported combining the two measures. The combined measure of medical conditions and psychological symptoms captured the essence of a pregnant woman' s health from a holistic perspective.

The results of this study indicate that work support is a robust predictor of delivery outcomes. Work restrictions differentiate pregnant women from their coworkers. Supervisors and coworkers who possess negative feelings toward pregnant women and react with negative feedback and withdrawal of support, produce a hostile work climate that adversely impacts delivery outcomes. The effect of work support in delivery outcomes was in addition to the biopsychological factors. Work climate and support make a difference in delivery outcomes.

The third trimester data represented both the cumulative and recent effects of medical conditions, psychological symptoms, and work support on delivery outcomes. Alternatively, the longitudinal data assessed the effects of changes in biopsychosociological factors on delivery outcomes over time. Changes in psychological well-being was the only significant longitudinal predictor of delivery outcomes. Increased psychological symptoms resulted in a 3.6 increase in adverse birth outcomes. Medical conditions and work support may not have predicted delivery outcomes because there was little change as demonstrated in the difference scores. The results suggest that cumulative medical conditions rather than changes in medical conditions were the better predictor of delivery outcomes. The findings also suggest that work support did not significantly change over the course of pregnancy.

The results indicate that work climate and support influence birth outcomes by affecting changes in psychological well-being. Once change scores in psychological well-being are controlled, work climate per se is no longer significant. Furthermore, work climate does not change significantly over time. If it is bad at the beginning, it will be bad at the end of the pregnancy. If the work climate is good at the beginning, then it stays good. However, a poor work climate is particularly noxious for pregnant women, because it is a time when they need support. They need support in order to maintain positive psychological well-being which is a factor in good birth outcome. If well-being changes for the worse, as it will in a noxious environment, then the likelihood of a complicated birth outcomes increases.

In this study demographics did not predict adverse delivery outcomes. These findings are in contradiction to past research. We expected to find race, rank, marital status and parity differences in delivery outcomes. Maternal medical conditions, psychological well-being, and work support may somehow incorporate demographic differences or are more powerful predictors of delivery outcomes than demographics. Demographics may not be robust enough to predict delivery outcomes when assessed with biopsychosociological factors. Alternatively, we may not have found demographic differences because of our military sample. Participants in this study were all full-time working women with access to health care. In the U.S. population at large, poor socioeconomic status, lack of health care, race and other demographics may be more strongly associated with adverse birth outcomes.

The findings of this study support a multidisciplinary approach to meet the year 2000 national health objective to reduce adverse birth outcomes. The more holistic approach used in this study to assess birth outcomes has helped define the contributions of psychological, sociological, and biological factors in delivery outcomes.

Delivery Log
Outcome Data
(n = 283/349)

164

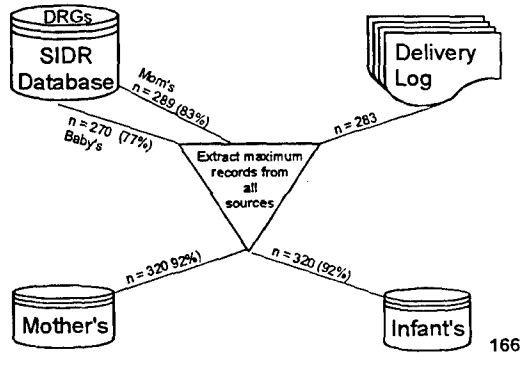
Diagnosis Related Groups from SIDR Mother and Infant

- Myringotomy w/ tube insertion
- Nutritional metabolic disorder
- Cesarean w/ complication
- Cesarean w/o complication
- Vaginal w/ complication
- Vaginal w/o complication
- Vaginal w/o complication, sterilize
- Abortion
- Normal newborn
- Neonate < 7506
- Neonate 1500 - 1996
- Neonate 2000 - 2499 Major problem
- Neonate 2000 - 2499 Minor problem
- Neonate 2000 - 2499 Other problem
- Neonate > 2499 w/ problem
- Neonate > 2499 Significant problem
- Neonate > 2499 Major problem
- Neonate > 2499 Minor problem
- Neonate > 2499 Other problem
- Neonate Diagnosis

- Mother

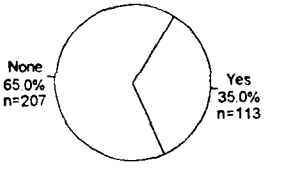
165

Database Composition



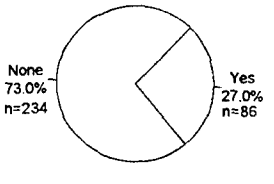
166

Infant Complications
(n=320 or 92%)



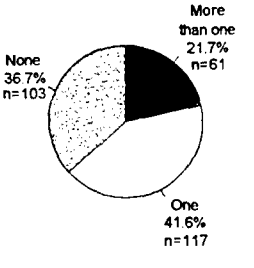
167

Mother Complications
(n=320 or 92%)



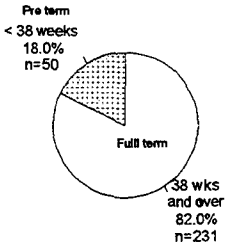
168

Parity
(n=281)



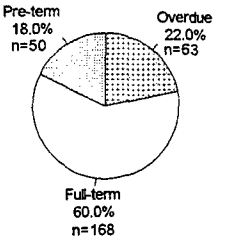
169

Gestation Period to last full week
(n=281)



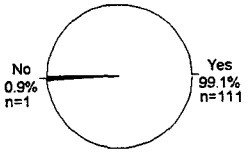
170

Gestation Period to last full week
(n=281)



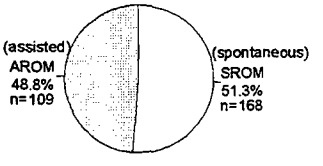
171

Fluid
(n = 112)



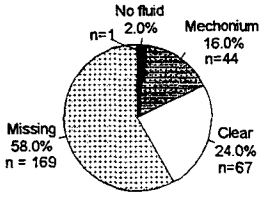
172

Membrane Rupture
(n=277)



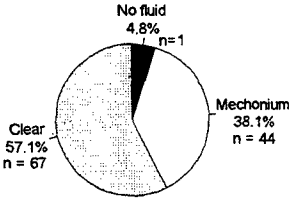
173

Membrane Color
(n=281)



174

Membrane Color
(n=112)



175

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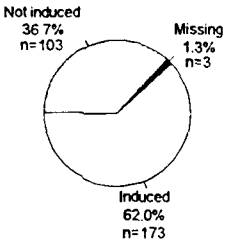
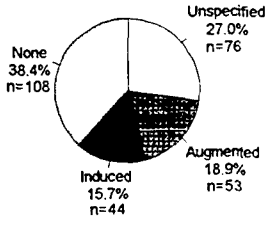
Induction
(n=279)



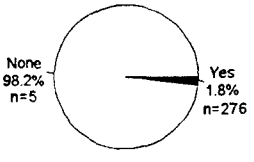
176

Pitocin Usage
(n=281)



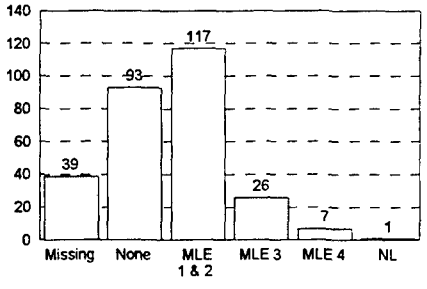
177

Analgesic
(n=281)



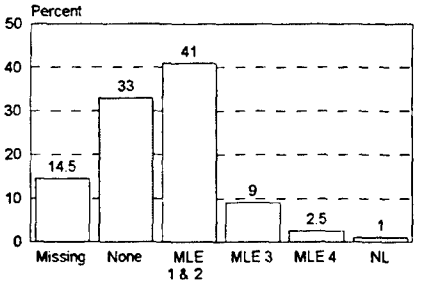
178

Epesiotomy
(n=283)



179

Epesiotomy
(n=283)



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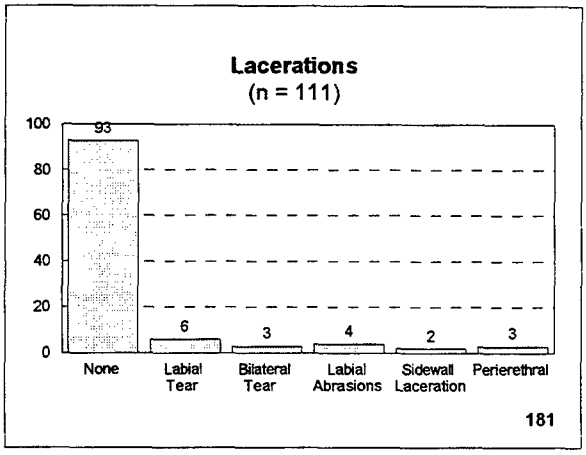
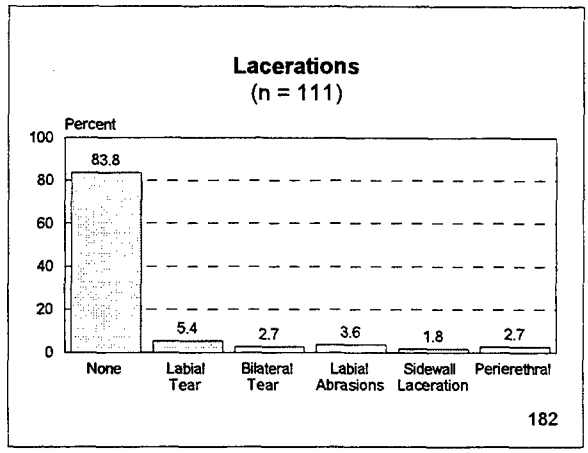
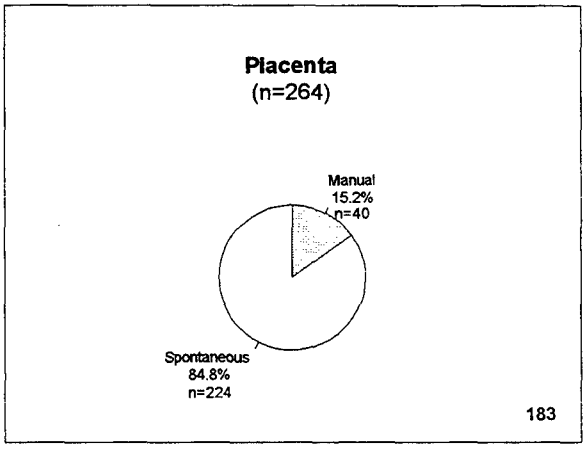
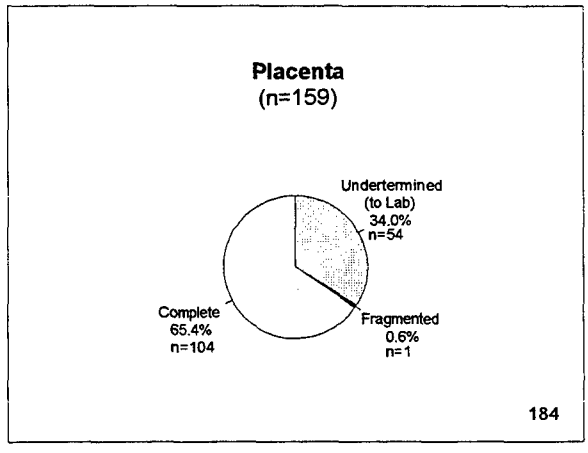
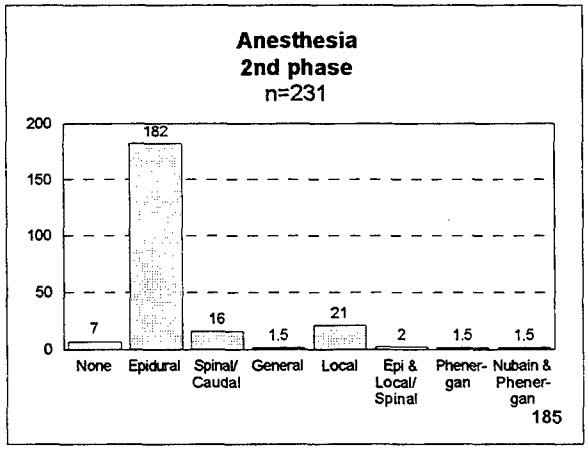
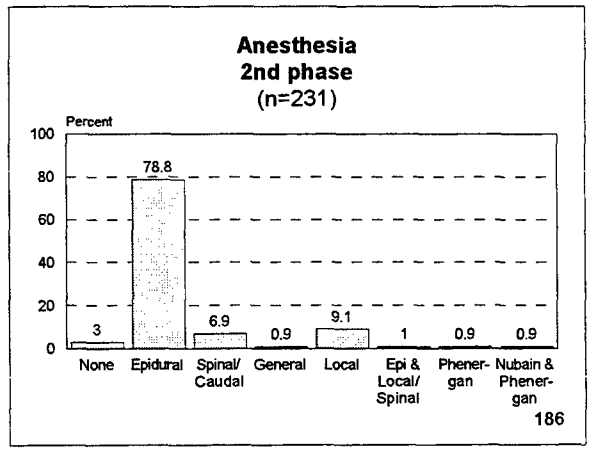

Lacerations
(n = 111)
100
80
60
40
20
0
93
6
3
4
2
3
None
Labial Tear
Bilateral Tear
Labial Abrasions
Sidewall Laceration
Perierethral
181


Lacerations
(n = 111)
Percent
100
80
60
40
20
0
83.8
5.4
2.7
3.6
1.8
2.7
None
Labial Tear
Bilateral Tear
Labial Abrasions
Sidewall Laceration
Perierethral
182

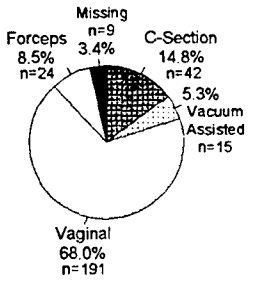

Placenta
(n=264)
Manual
15.2%
n=40
Spontaneous
84.8%
n=224
183


Placenta
(n=159)
Undertermined
(to Lab)
34.0%
n=54
Complete
65.4%
n=104
Fragmented
0.6%
n=1
184


Anesthesia
2nd phase
n=231
200
150
100
50
0
7
182
16
1.5
21
2
1.5
1.5
None
Epidural
Spinal/ Caudal
General
Local
Epi & Local/ Spinal
Phener- gan
Nubain & Phener- gan
185

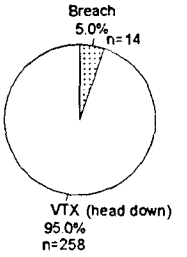

Anesthesia
2nd phase
(n=231)
Percent
100
80
60
40
20
0
3
78.8
6.9
0.9
9.1
1
0.9
0.9
None
Epidural
Spinal/ Caudal
General
Local
Epi & Local/ Spinal
Phener- gan
Nubain & Phener- gan
186

Method of Delivery



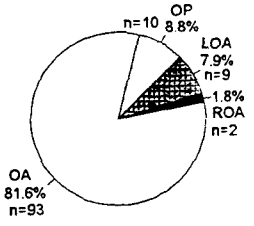
187

Presentation of Infant
(n=272)



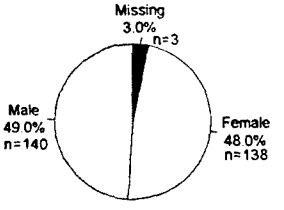
188

VTX Position
(n = 114)



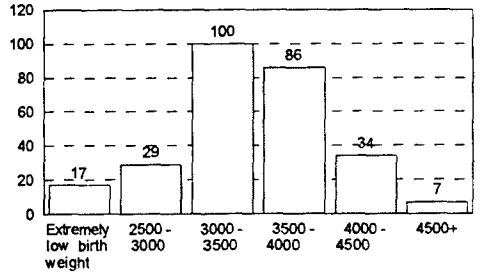
189

Gender of Infant
(n=281)



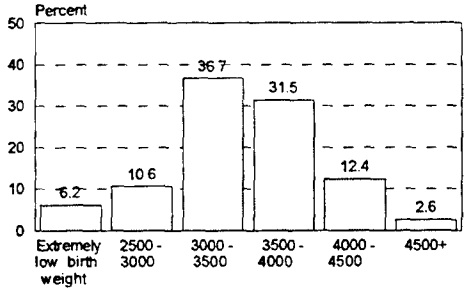
190

Gram Birth Weight
(n = 273)

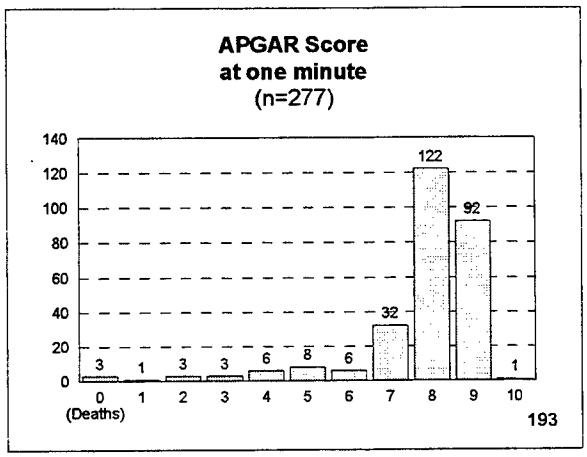


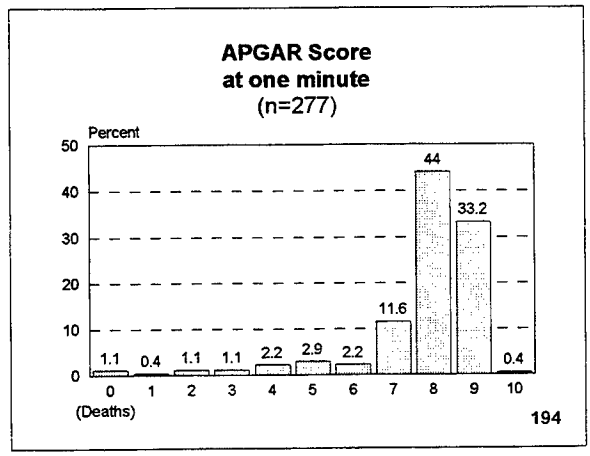
191

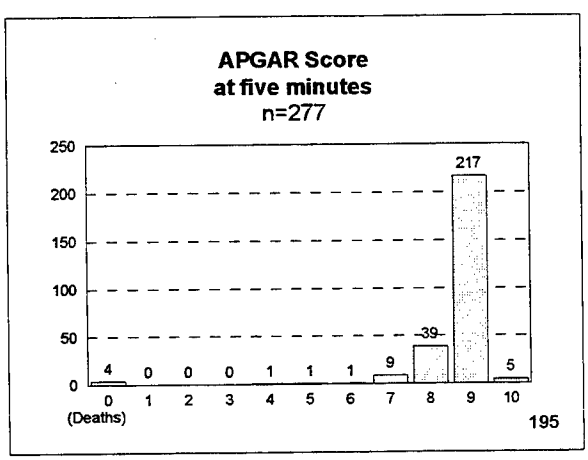
Gram Birth Weight
(n = 273)

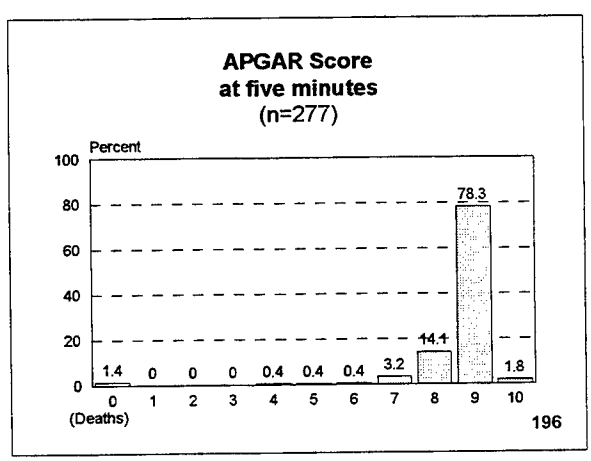


192









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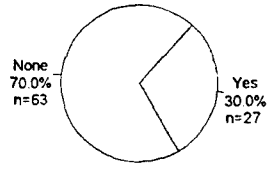
Delivery Log
Outcome Data
(n = 90/102)

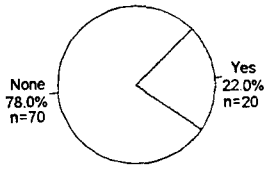
197

Infant Complications
Longitudinal Data Set
(n=90 or 88%)



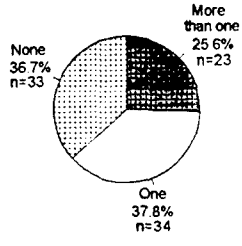
198

Mother Complications
Longitudinal Data Set
(n=90 or 88%)



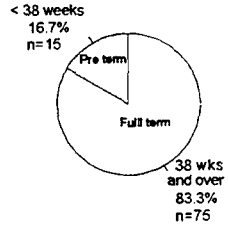
199

Parity
(n=90 or 88%)



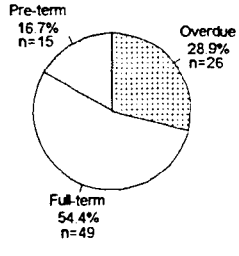
200

Gestation Period
to last full week
(n=90 or 88%)



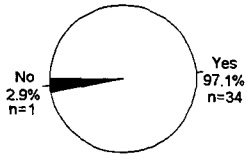
201

Gestation Period
to last full week
(n=90 or 88%)



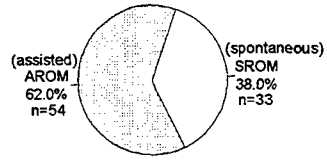
202

Fluid
(n=35)



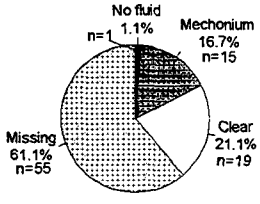
203

Membrane Rupture
(n=90 or 88%)



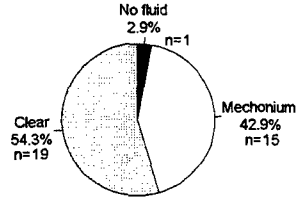
204

Membrane Color
(n=90 or 88%)



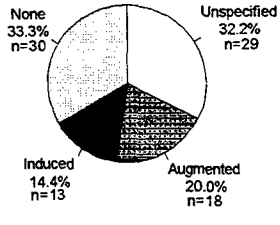
205

Membrane Color
(n=87)



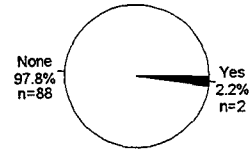
206

Pitocin Usage
(n=90 or 88%)

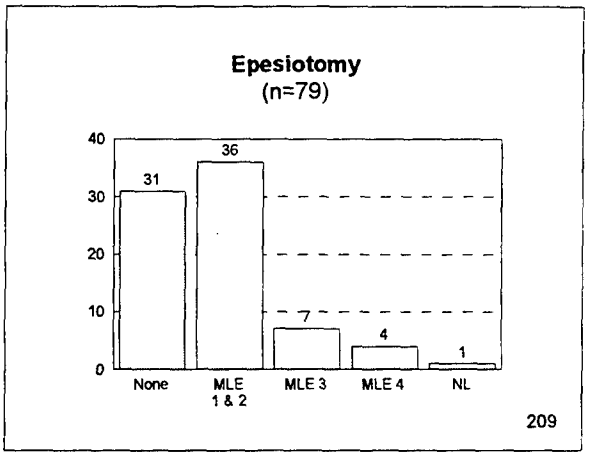


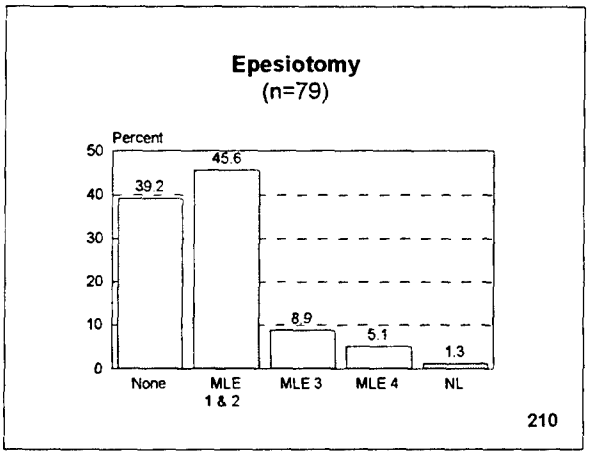
207

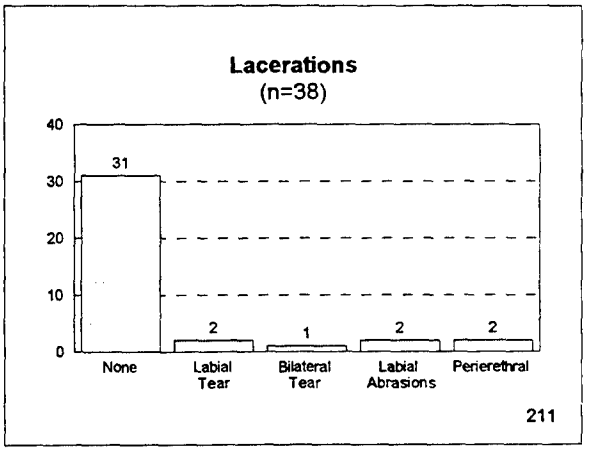
Analgesic
(n=90)

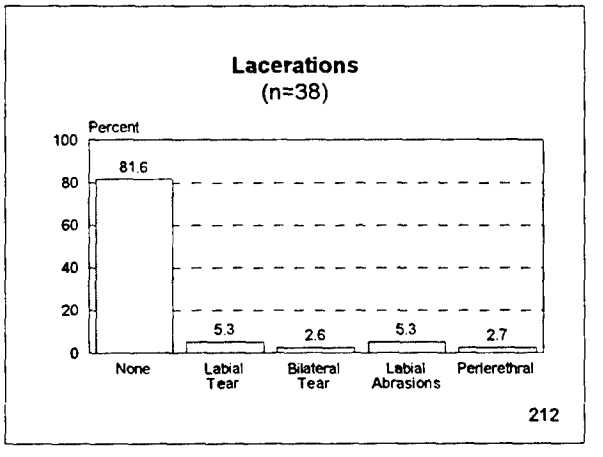


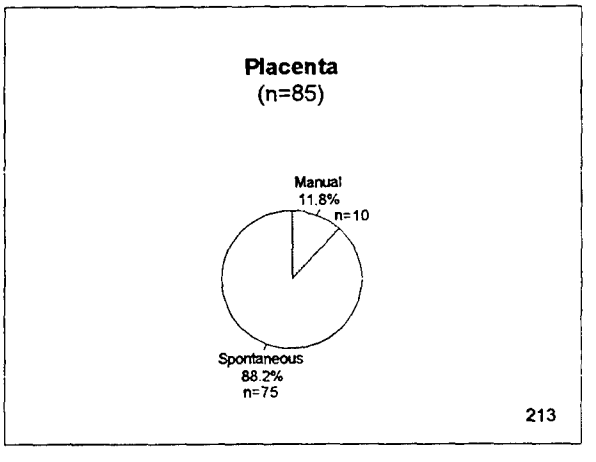
208

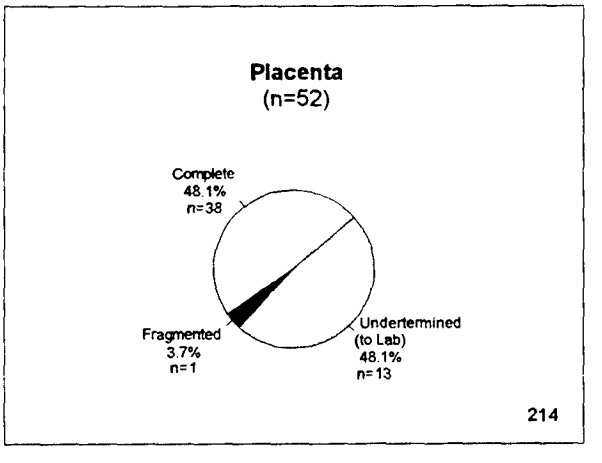

Epesiotomy
(n=79)
40
30
20
10
0
31
36
7
4
1
None
MLE 1 & 2
MLE 3
MLE 4
NL
209


Epesiotomy
(n=79)
Percent
50
40
30
20
10
0
39.2
45.6
8.9
5.1
1.3
None
MLE 1 & 2
MLE 3
MLE 4
NL
210

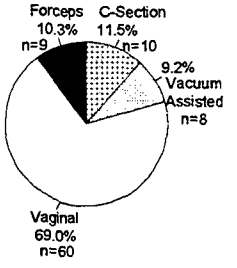

Lacerations
(n=38)
40
30
20
10
0
31
2
1
2
2
None
Labial Tear
Bilateral Tear
Labial Abrasions
Perierethral
211


Lacerations
(n=38)
Percent
100
80
60
40
20
0
81.6
5.3
2.6
5.3
2.7
None
Labial Tear
Bilateral Tear
Labial Abrasions
Perierethral
212


Placenta
(n=85)
Manual
11.8%
n=10
Spontaneous
88.2%
n=75
213

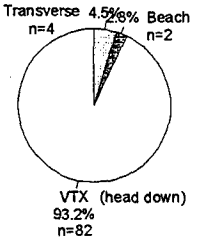

Placenta
(n=52)
Complete
48.1%
n=38
Fragmented
3.7%
n=1
Undetermined
(to Lab)
48.1%
n=13
214

Method of Delivery
(n=87)



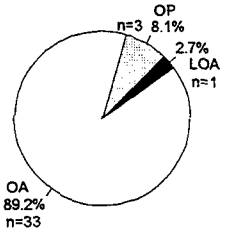
215

Presentation of Infant
(n=88)



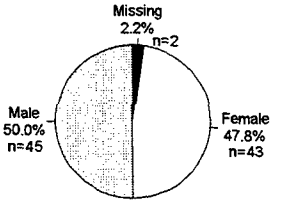
216

VTX Position
(n=37)



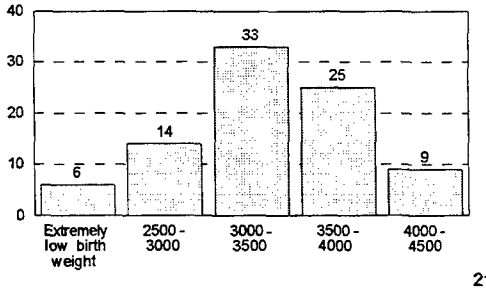
217

Gender of Infant
(n=90)



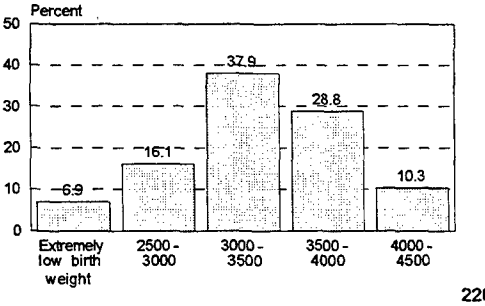
218

Gram Birth Weight
(n=90)

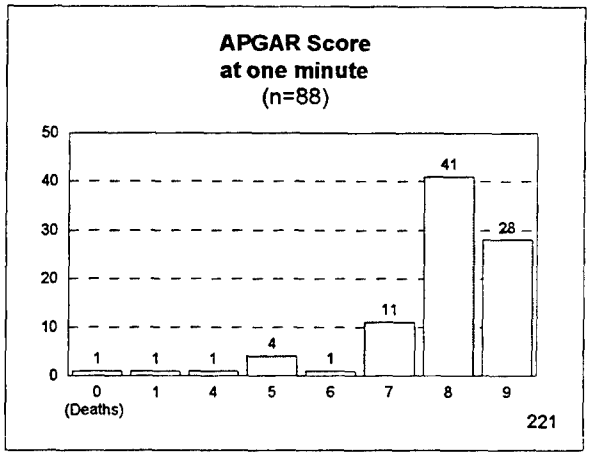


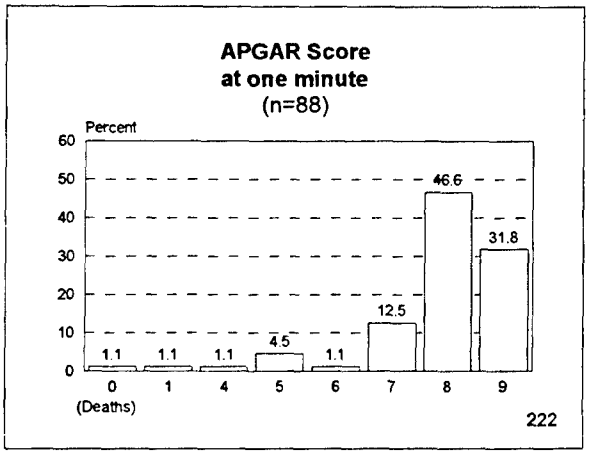
219

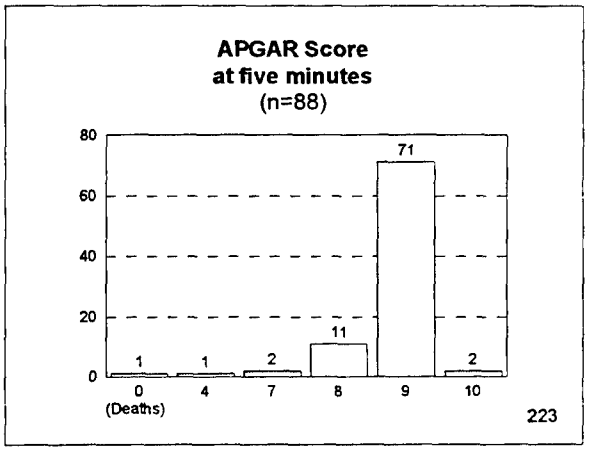
Gram Birth Weight
(n=90)

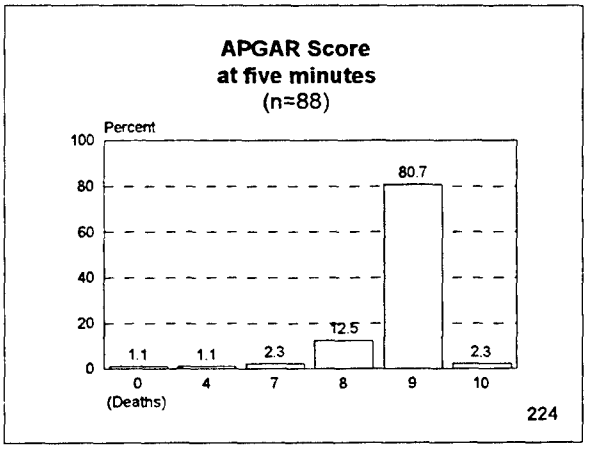


220









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Univariate
Infant Complications
(n = 219/320)

225

Infant Complications
Probit Regression and Chi-squared
(less powerful than logistic)

Grade		p >
Jr. Enlisted	χ^2 = 8.3	.03
NCO	χ^2 = 7.4	.01
Company Grade Officer	χ^2 = 7.1	.01

Overall χ^2 = NS

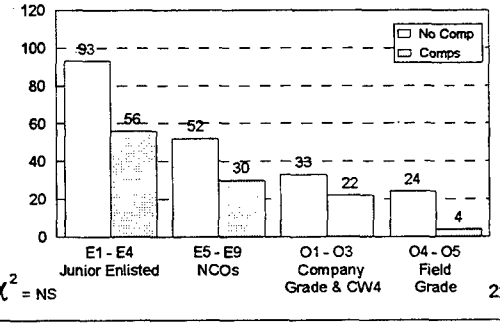
Grade * Marital * Race

White, Officers, Married	χ^2 = 4.1	p > .04
All others	NS	

Overall χ^2 = NS

226

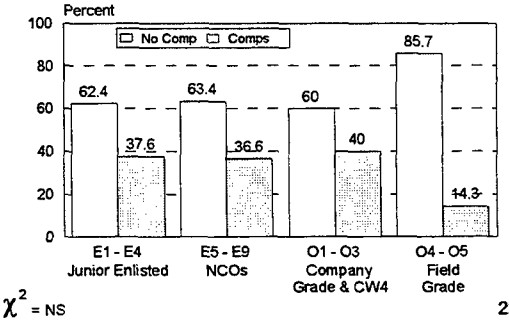
Military Pay Grade
(n=314)



χ^2 = NS

227

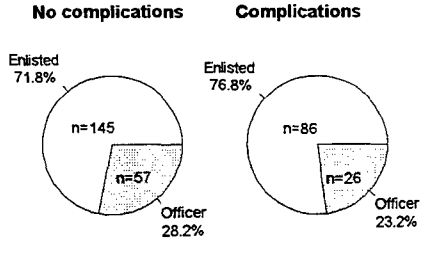
Military Pay Grade
(n=314)



χ^2 = NS

228

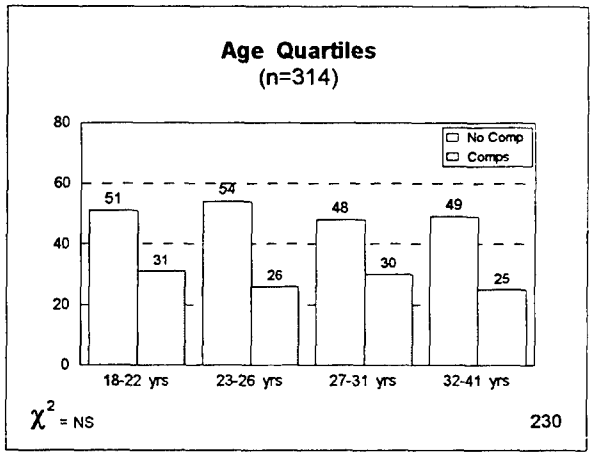
Military Pay
(n=314)

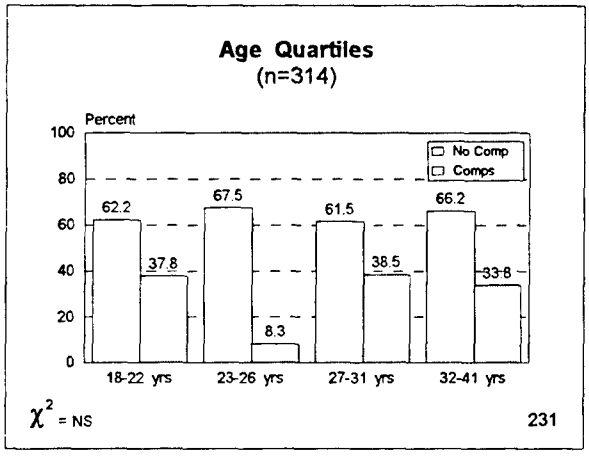


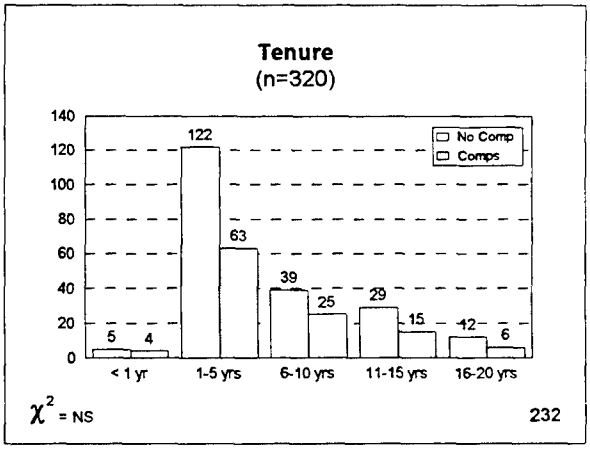
χ^2 = NS

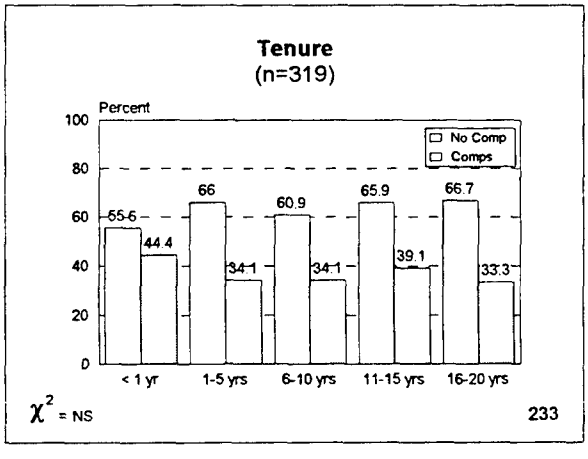
229

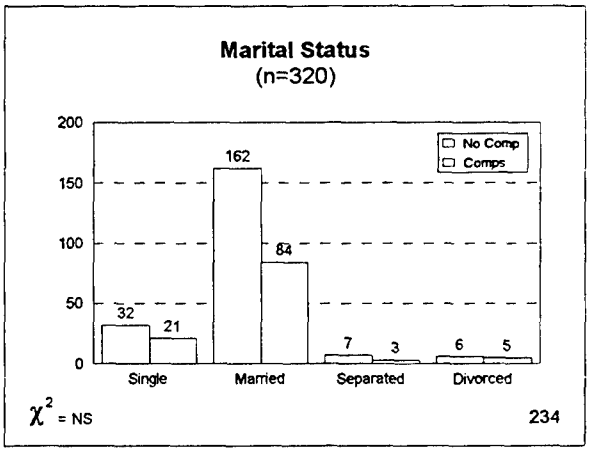
intentionally left blank

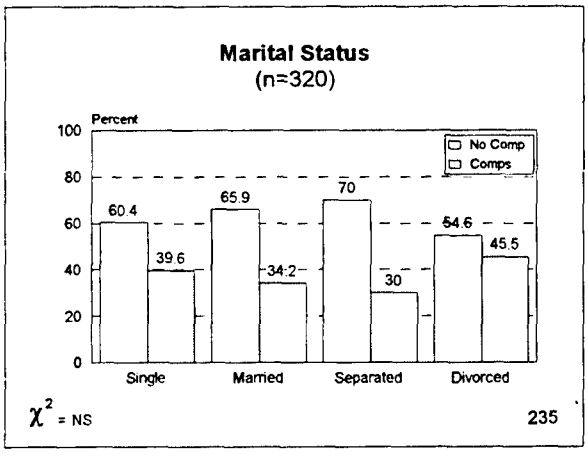

Age Quartiles
(n=314)
No Comp
Comps
80
60
40
20
0
51
31
54
26
48
30
49
25
18-22 yrs
23-26 yrs
27-31 yrs
32-41 yrs
χ^2 = NS
230


Age Quartiles
(n=314)
Percent
No Comp
Comps
100
80
60
40
20
0
62.2
37.8
67.5
8.3
61.5
38.5
66.2
33.8
18-22 yrs
23-26 yrs
27-31 yrs
32-41 yrs
χ^2 = NS
231

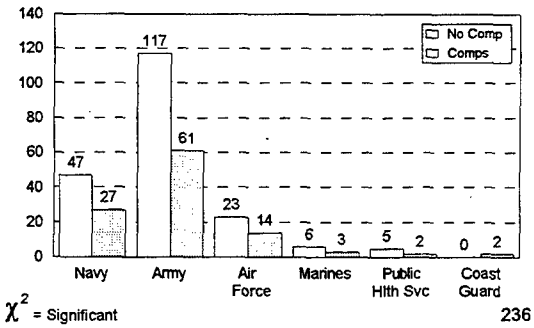

Tenure
(n=320)
No Comp
Comps
140
120
100
80
60
40
20
0
5
4
122
63
39
25
29
15
12
6
< 1 yr
1-5 yrs
6-10 yrs
11-15 yrs
16-20 yrs
χ^2 = NS
232


Tenure
(n=319)
Percent
No Comp
Comps
100
80
60
40
20
0
55.6
44.4
66
34.1
60.9
34.1
65.9
39.1
66.7
33.3
< 1 yr
1-5 yrs
6-10 yrs
11-15 yrs
16-20 yrs
χ^2 = NS
233


Marital Status
(n=320)
No Comp
Comps
200
150
100
50
0
32
21
162
84
7
3
6
5
Single
Married
Separated
Divorced
χ^2 = NS
234


Marital Status
(n=320)
Percent
No Comp
Comps
100
80
60
40
20
0
60.4
39.6
65.9
34.2
70
30
54.6
45.5
Single
Married
Separated
Divorced
χ^2 = NS
235

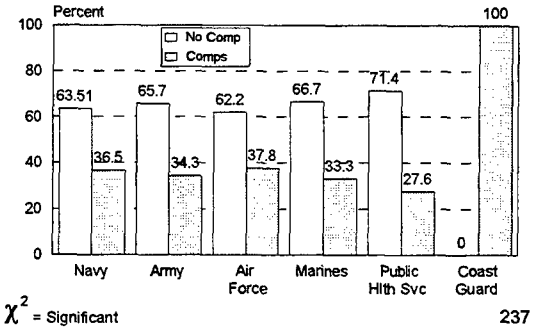
Branch of Service
(n=307)



χ^2 = Significant

236

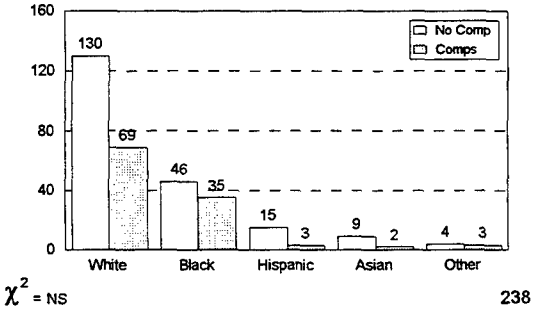
Branch of Service
(n=307)



χ^2 = Significant

237

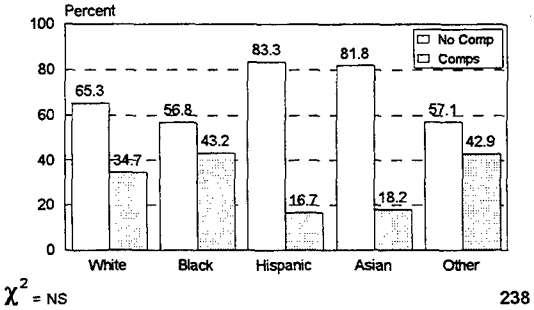
Ethnicity
(n=316)



χ^2 = NS

238

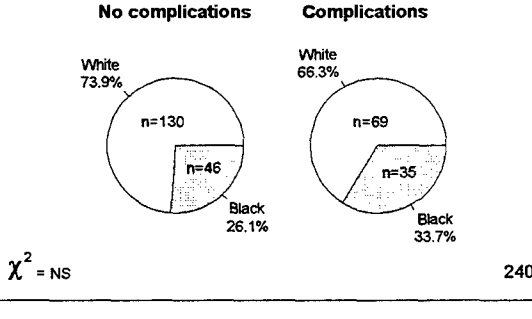
Ethnicity
(n=316)



χ^2 = NS

238

Ethnicity
(n=280)

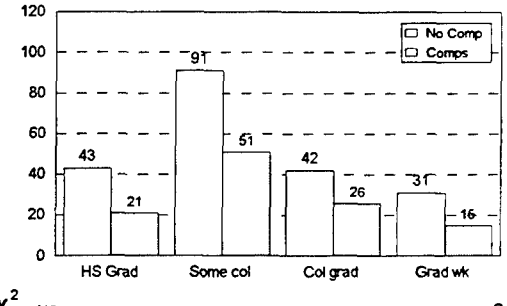


χ^2 = NS

240

intentionally left blank

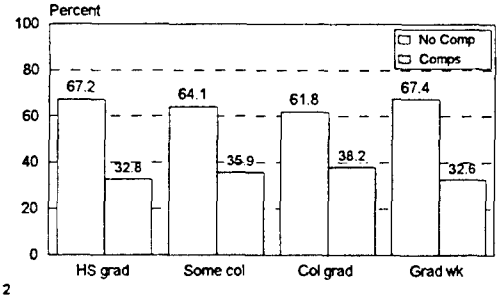
Education
(n=320)



χ^2 = NS

241

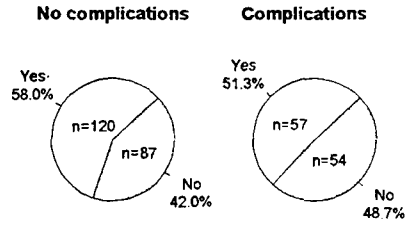
Education
(n=320)



χ^2 = NS

242

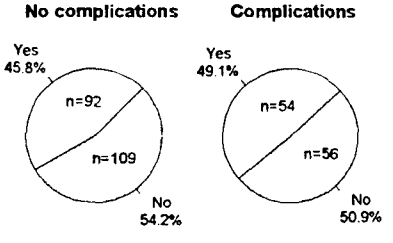
Pregnancy Planning
(n=318)



χ^2 = NS

243

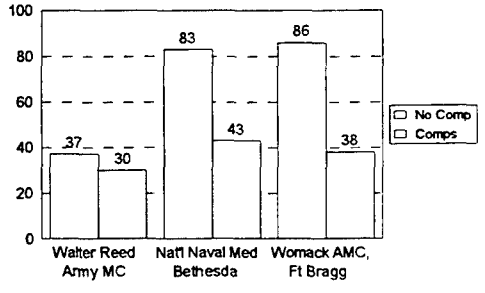
Pregnancy Timing
(n=311)



χ^2 = NS

244

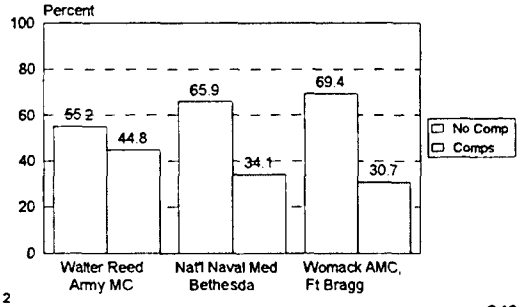
Where Received Maternity Care
(n=317)



χ^2 = Significant

245

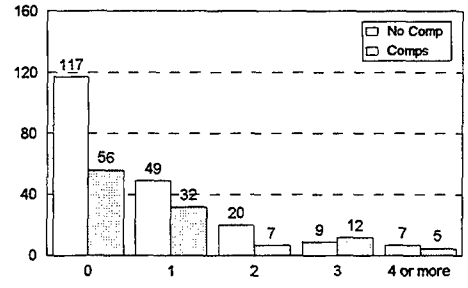
Where Received Maternity Care
(n=317)



χ^2 = Significant

246

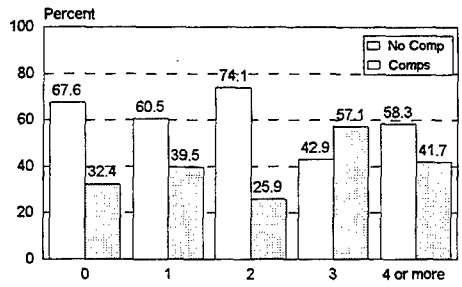
Number of Pregnancy Problems
(n=314)



χ^2 = NS

247

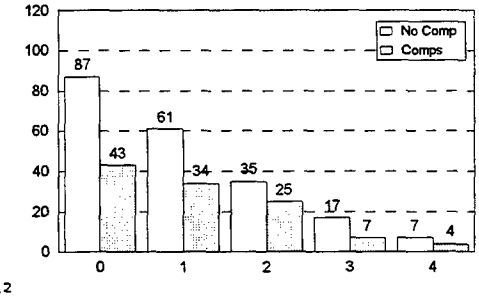
Number of Pregnancy Problems
(n=314)



χ^2 = NS

248

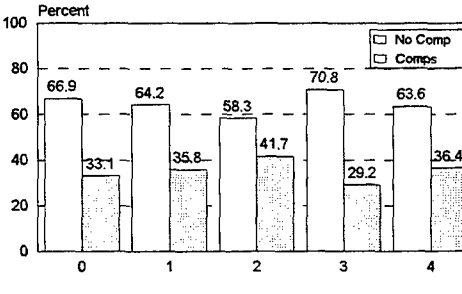
Parity
(n=320)



χ^2 = NS

249

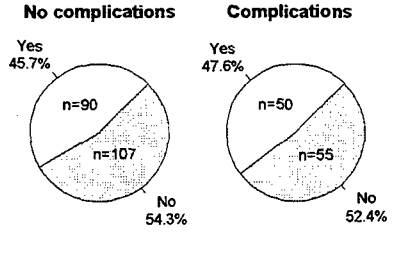
Parity
(n=320)



χ^2 = NS

250

Is there a good time, in a military career, to become pregnant?
(n=302)



χ^2 = NS

251

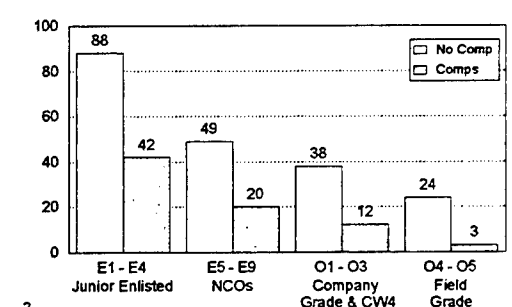
intentionally left blank

Univariate
Mother Complications
(n = 219/320)

252

intentionally left blank

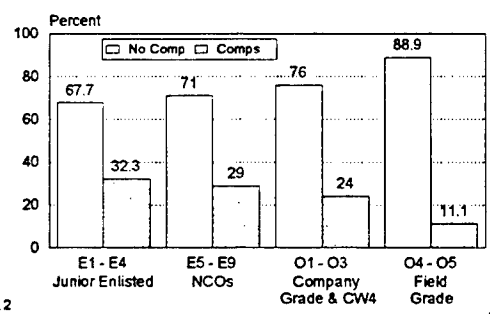
Military Pay Grade
(n=276)



χ^2 = NS

253

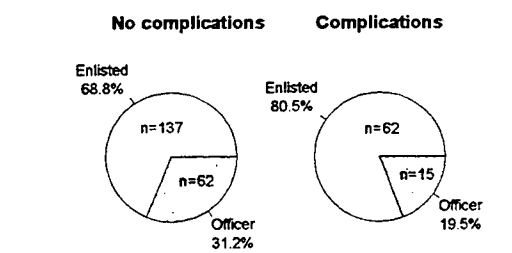
Military Pay Grade
(n=276)



χ^2 = NS

254

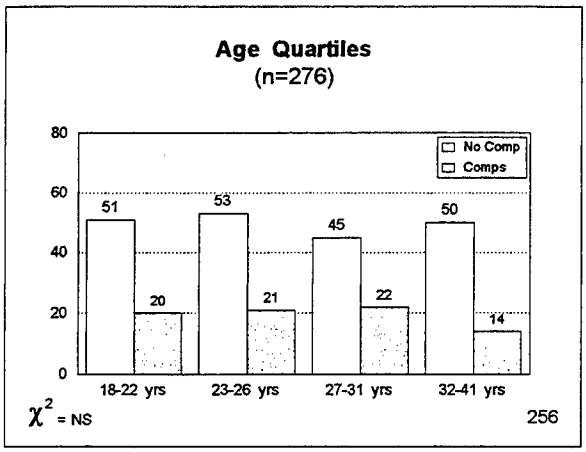
Military Pay
(n=276)

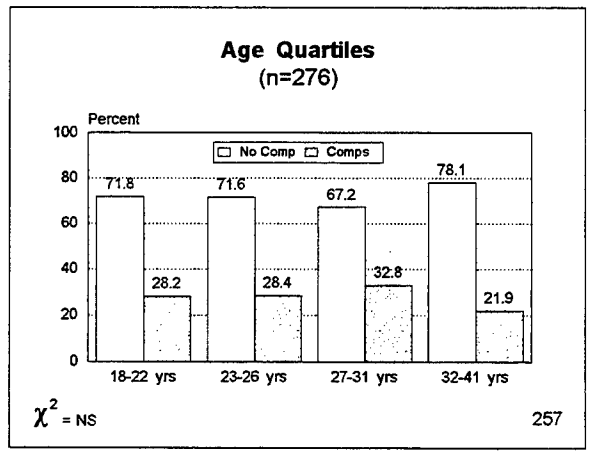


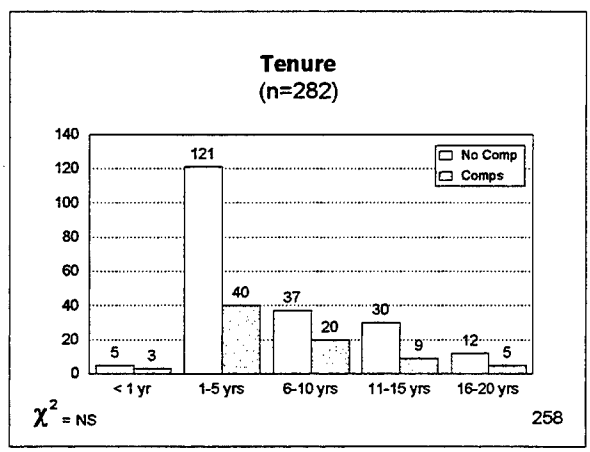
χ^2 = NS

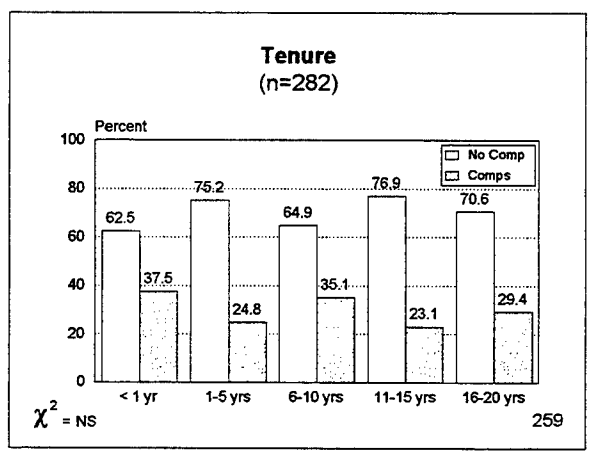
255

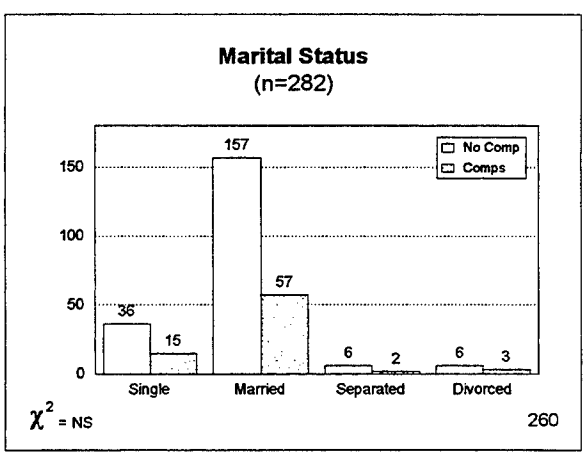
intentionally left blank


Age Quartiles
(n=276)
No Comp
Comps
80
60
40
20
0
51
20
53
21
45
22
50
14
18-22 yrs
23-26 yrs
27-31 yrs
32-41 yrs
χ² = NS
256


Age Quartiles
(n=276)
Percent
No Comp
Comps
100
80
60
40
20
0
71.8
28.2
71.6
28.4
67.2
32.8
78.1
21.9
18-22 yrs
23-26 yrs
27-31 yrs
32-41 yrs
χ² = NS
257


Tenure
(n=282)
No Comp
Comps
140
120
100
80
60
40
20
0
5
3
121
40
37
20
30
9
12
5
< 1 yr
1-5 yrs
6-10 yrs
11-15 yrs
16-20 yrs
χ² = NS
258


Tenure
(n=282)
Percent
No Comp
Comps
100
80
60
40
20
0
62.5
37.5
75.2
24.8
64.9
35.1
76.9
23.1
70.6
29.4
< 1 yr
1-5 yrs
6-10 yrs
11-15 yrs
16-20 yrs
χ² = NS
259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(n=282)
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Comps
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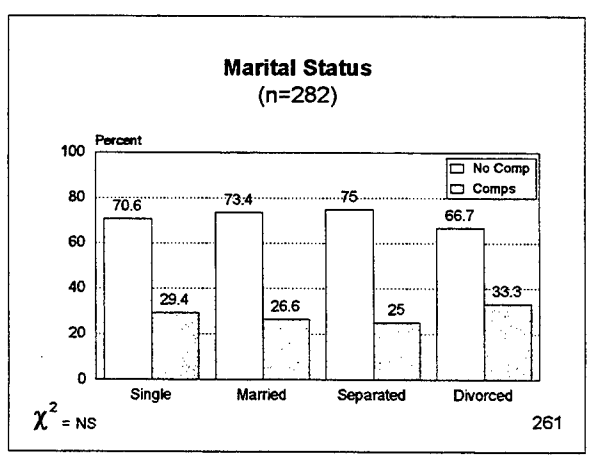
50
0
36
15
157
57
6
2
6
3
Single
Married
Separated
Divorced
χ² = NS
260


Marital Status
(n=282)
Percent
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Comps
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60
40
20
0
70.6
29.4
73.4
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25
66.7
33.3
Single
Married
Separated
Divorced
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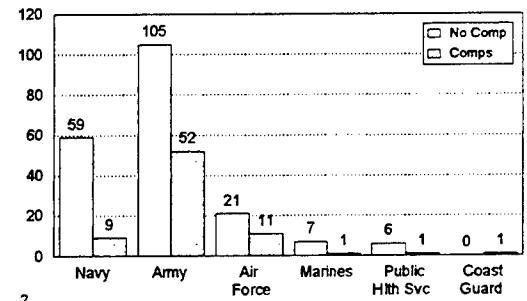
261

Branch of Service
(n=273)



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262

Branch of Service
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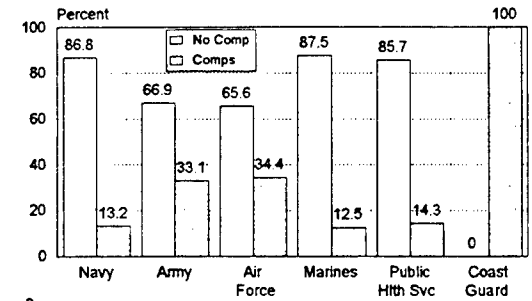

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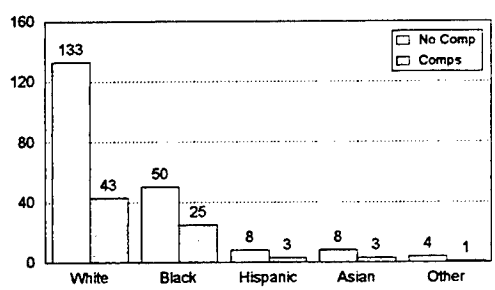
263

Ethnicity
(n=278)



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Ethnicity
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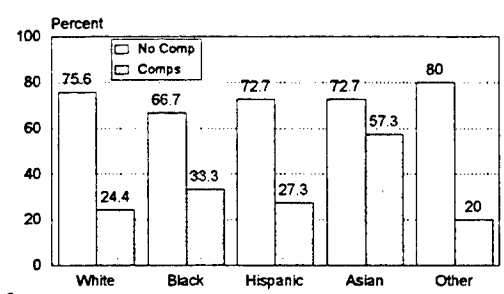
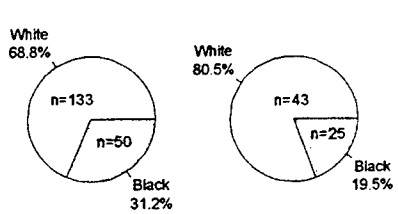


χ^2 = NS

265

Ethnicity
(n=251)

No complications **Complications**



χ^2 = NS

266

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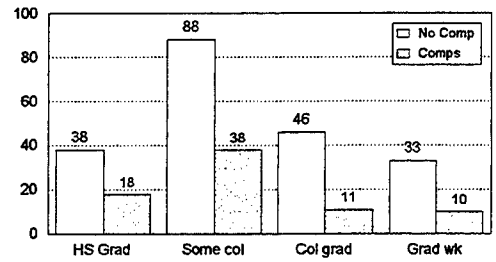
Education
(n=282)



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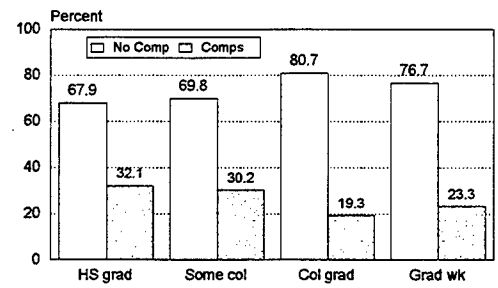
267

Education
(n=282)



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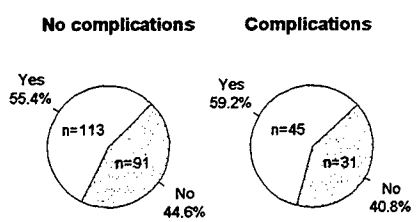
268

Pregnancy Planning
(n=280)



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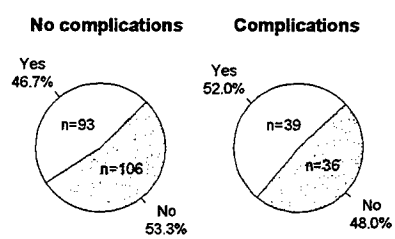
269

Pregnancy Timing
(n=274)



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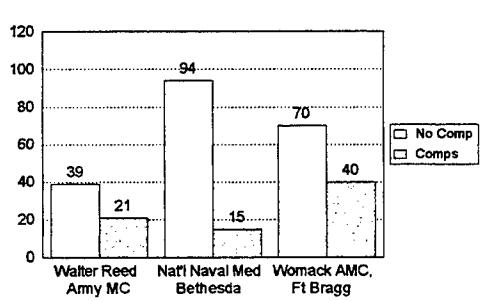
270

Where Received Maternity Care
(n=279)



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271

Where Received Maternity Care
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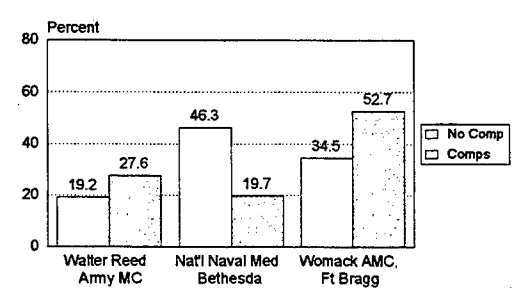
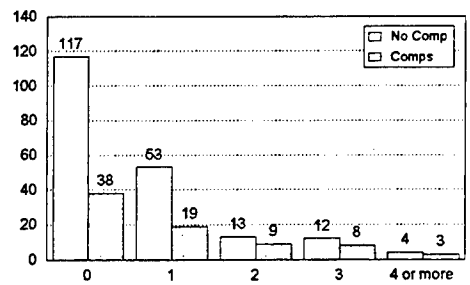


χ^2 = Significant

272

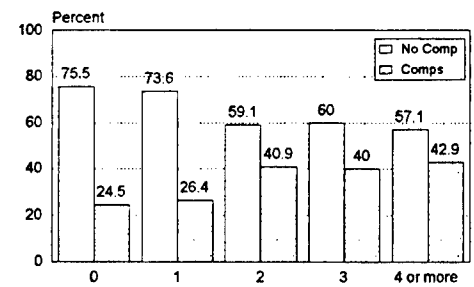
Number of Pregnancy Problems
(n=276)



χ^2 = NS

273

Number of Pregnancy Problems
(n=276)



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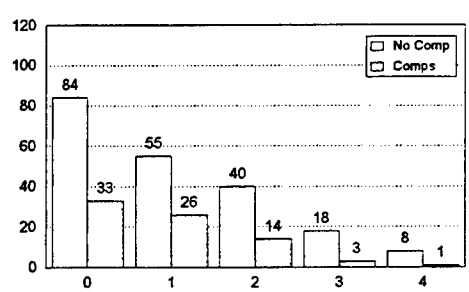
274

Parity
(n=282)



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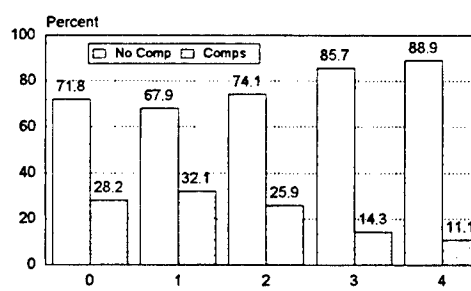
275

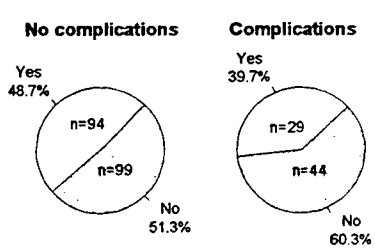
Parity
(n=282)



χ^2 = NS

276

Is there a good time, in a military career, to become pregnant?
(n=266)



χ^2 = NS

277

RECOMMENDATIONS

The findings of this study provide evidence that there is not a system wide pregnancy discrimination problem in the military, but rather that there may be individual leaders or suborganizations within the military where pregnant personnel experience difficulty. Because topic specific recommendations were addressed in each section of this report, they are not repeated in this section. Three recommendations about education, prenatal care, and creating a database incorporate the overall findings of the study. One additional recommendation for future research was included.

Training and Education

The primary recommendation is for continued training and education regarding the utilization and development of pregnant personnel. The training and education should be ongoing and include information about pregnancy, existing pregnancy policy, attrition of women following pregnancy, and the contribution of women to military readiness.

The training and education program should be initiated in the officer and enlisted basic courses, should be refreshed in the existing mandatory quarterly training program, and followed-up more extensively in officer and enlisted advanced training courses. The training and education program should be supplemented by an appropriate handbook on pregnancy policy and the treatment of pregnant personnel. The handbook should serve as a reference source for leading and developing pregnant personnel.

All personnel require training and education, so that they are fully informed of the organization's policy and are aware of their rights and responsibilities and the rights and responsibilities of pregnant personnel. Leaders need information regarding the treatment and development of pregnant personnel in order to create a work environment that is free from discrimination and provides support for all personnel.

Ignorance and/or erroneous assumptions about the capability of pregnant women may lead to unnecessary work reassignment which is a form of gender discrimination. Leaders who lack a basic knowledge of pregnancy or who do not possess the skills to appropriately utilize pregnant workers are more likely to unnecessarily reassign pregnant personnel.

Leaders must judiciously consider the reasons for and against the reassignment of pregnant personnel and when possible, avoid reassignment. Regardless of the reasons for reassignment, the data in this study indicate that work reassignment negatively influences psychological health, work effort, and intentions to stay in the organization. If leaders must reassign pregnant personnel, then the reasons for reassignment should be fully explained and leaders should seek to place pregnant personnel in meaningful positions. This should be done because meaningless work reassignment exacerbates psychological distress and contributes to reduced work effort. Pregnant personnel who are reassigned should be monitored and provided additional support.

The military should pay special attention to rank differences in the utilization of pregnant personnel. Rank should not be the basis for reassignment of pregnant personnel. Because there are more enlisted personnel available, does not justify reassigning pregnant enlisted personnel.

Organizations must play an active role in the support of pregnant women. It is in the organizations best interest to reduce adverse pregnancy outcomes. Adverse pregnancy outcomes cost the organization in a number of ways: increased health care costs; work absences; reduced productivity and morale; and turnover.

Prenatal Care

The second recommendation is to embrace a more holistic approach to prenatal care and to include assessment and treatment of psychological well-being and work factors. It is widely accepted that prenatal care improves birth outcomes. Exactly how prenatal care improves outcomes such as reducing infant mortality or low birth weight remains unclear. Prenatal care varies in clinical content and hence, some practices are more beneficial than others (Peabody, 1995; Goldenberg, Patterson, & Freese, 1992).

The results of this study provide support for the inclusion of psychological testing and treatment within the context of prenatal care. Work support should be assessed and monitored in prenatal care, with an understanding that health care providers may be unable to change the work environment. The military has a unique opportunity to incorporate a more holistic approach to prenatal care because it provides its own health care and occupational health assets. The military has the potential to assess work factors in concert with health care and implement changes in both to enhance delivery outcomes, psychological well-being, and retention.

Database

A centralized database for the military is needed to better assess work and pregnancy factors. The existing SIDR and laboratory databases are very large, complex, and are not continuous which makes access to relevant pregnancy data difficult. The creation of a centralized pregnancy database would not require new data collection, but rather data abstraction from existing data sources. For example, PASBA could routinely abstract active duty pregnant personnel data from the SIDR data files and create a subset of data based on the fiscal year. To ascertain pregnancy rates, pregnancy test results of active duty women could be abstracted from the laboratory databases at each facility and centralized. The centralized database could then be queried by clinicians, researchers, and leaders. The centralized pregnancy database could then be linked to other databases that are maintained in the military and would provide a wealth of information about how pregnancy effects retention, career progression, assignment practices, and health care utilization.

Future Research

The findings and recommendations of the study can be applied with modifications and caution to non military organizations. Military women and working civilian women share the common experience of working outside of the home. Like their civilian counterparts, the majority of military women work in traditional occupations such as health care, administration, or supply services (ODCSPER, 1996). Conversely, military women work in nontraditional environments and some work characteristics such as physical fitness and deployment requirements are unique to the military. Some civilian women may also work in nontraditional environments that may be comparable. The training and education recommendations should be tailored to fit with the characteristics of the organization.

In the military, pregnant personnel receive full pay and benefits whether or not their medical condition restricts or excludes them from working. In the civilian sector, pregnant personnel may or may not be covered by sick leave, medical leave, leave without pay, or disability coverage. Furthermore, not all women in the civilian sector are covered by health insurance. The financial ramifications of work absences may be greater in the civilian sector and may differentially influence perceptions of the work climate. Further research is needed to compare pregnant military personnel with civilian women working inside and outside of the home. The propensity of work reassignment of pregnant personnel in different civilian employment settings is unknown. Whether or not the military sample is representative awaits further research.

Further research is needed to assess leaders' and coworkers' perceptions and experiences working with pregnant personnel. A matched sample of pregnant women, nonpregnant women and their supervisors would provide information about differences in perceptions and potential discrimination directed toward women in general or pregnant women specifically. The inclusion of supervisors would provide information about potential supervisor demographic differences in the treatment of pregnant personnel. For example, do supervisors who have children treat pregnant women better; do older supervisors treat pregnant women better; are there supervisor gender differences in the treatment of pregnant women?

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APPENDIX A
QUESTIONNAIRES AND DELIVERY LOG BOOK

INITIAL QUESTIONNAIRE ITEMS

VARIABLE	RAW FIELD	ITEM
1. SSN	1-9	Social security number
2. GRADE	10-11	Military grade 1) E-1 7) E-7 13) CW4 2) E-2 8) E-8 14) O1 3) E-3 9) E-9 15) 02 4) E-4 10) WO1 16) 03 5) E-5 11) CW2 17) 04 6) E-6 12) CW3 18) 05 19) 06
rgrade		Junior enlisted E2-E4 = 1 Noncommissioned officers E5-E8 = 2 Company grade officers CW2-03 = 3 Field grade officers 04-05 = 4 *No E1, E9,WO1,CW4,06 in sample
sgrade		Enlisted E2-E8 = 1 Officers CW2-05 = 2
3. AGE	12-13	Age on last birthday
rage		Less than 22 = 1 23-26 = 2 27-31 = 3 32+ = 4

4. MARITAL 14		Marital status: 3) Separated 1) Single 4) Widowed 2) Married 5) Divorced
Newmar		1) married 2) other than married
5. BRANCH	15	Service component: 4) Marines 1) Navy 5) PHS 2) Army 6) NOAA 3) Air Force 7) Coast Guard
6. TENURE	16	How long have you been on active duty? 1) Less than one year 4) 11-15 years 2) 1-5 years 5) 16-20 years 3) 6-10 years 6)over 20 years
7. SPOUSEAD	17	Is your spouse on active duty? 1) Yes 2) No 3) N/A
8. RACE	18	What is your race/ethnic group? 1) White (not hispanic) 4) Asian 2) Black (not hispanic) 5) Other 3) hispanic
Newrace		1) White 2) Black
9. SPRACE	19	What is your spouse's race/ethnic group? 1) White (not hispanic) 4) Asian 2) Black (not hispanic) 5) Other 3) hispanic
10. ED	20	What is the highest level of education that you have completed? 1) Some high school 4) Some college 2) GED 5) College graduate 3) High school diploma 6) Graduate work
11. MOS	21-25	What is your military occupational specialty? Alpha-numeric 3 digit code Only accurate for Army personnel
MOS		Army only. All others coded missing. Not meaningful for other services.

12. WORKMOS 26

Are you currently working in your assigned MOS?
1) yes 2) no

13. HOURS 27-28

How many hours a week do your currently work?

14. HOUSING 29

What are your housing arrangements?
1) military housing 3) Renting home
2) Apartment 4) Own home

15. GESTATON 30-31

How many weeks pregnant are you currently? (Continuous)

Term

12 weeks or less = 1
13-24 weeks = 2
25 + weeks = 3

16. PREGUNIT 32

How many other pregnant women are there in your unit?
1) 0 4) 3 7) don't know
2) 1 5) 4
3) 2 6) 5 +

17. HOSPITAL 33

At which installation are you receiving maternity care?
1) Walter Reed Army Medical Center
2) National Naval Medical Center-Bethesda
3) Fort Bragg

1) STRONGLY DISAGREE------ 5) STRONGLY AGREE

18. CONCLIM1 34 Your commander is supportive of your pregnancy

19. COMCLIM2 35 The command climate is positive

20. PREGPRO1 36 Your pregnancy profile has been honored without question or harassment

21. PREGPRO2 37 Medically prescribed work rests have been honored without question or harassment

22.	COMCLIM3	38	Leaders are supportive of pregnancy related "sick days"
23.	COMCLIM4	39	You have not been hassled about time off for pregnancy-related medical appointments
24.	COMCLIM5	40	You have informed your chain of command about any negative remarks that you have received about your pregnancy
25.	COMCLIM6	41	Your chain of command has acted to support you in response to negative remarks about your pregnancy
26.	COWORK1	42	You and your coworkers get along well
27.	COWORK2	43	Coworkers have not made negative remarks about you missing PT or FTX because of your pregnancy
28.	COWORK3	44	Coworkers have been supportive of your pregnancy
29.	COWORK4	45	Coworkers are not resentful of time you missed from work because of your pregnancy
30.	COWORK5	46	Coworkers have had their workload increased because of manpower loss due to your pregnancy
31.	COWORK6	47	Coworkers are resentful of work load increases because of your pregnancy
32.	COWORK7	48	Coworkers include you in non-work activities
33.	COHESION	49	You feel that your unit is cohesive
34.	MORALE	50	Your morale is high
35.	COMMIT	51	You are committed to the Army/Navy/Air Force/Marines/Coast Guard
comsup			Mean of comclim1 comclim2 comclim6
coworker			Mean of cowork1-cowork4 cowork7 cohesion
pregsup			Mean of pregpro1 pregpro2 comclim3 comclim4
climate			Mean of comsup, coworker and pregsup items

USE THE FOLLOWING SCALE TO ANSWER THE QUESTIONS BELOW:
1) ALWAYS 2) MANY TIMES 3) SOMETIMES 4) A FEW TIMES 5) NEVER

During pregnancy, in your present unit have you experienced incidences of:

36.	EXCLUS	52	Exclusion
37.	RACEDIS	53	Racial discrimination
38.	FAVOR	54	Favoritism
39.	SEXHAR	55	Sexual harassment
40.	UNWANT	56	Unwanted touching
41.	GENDIS	57	Gender discrimination
42.	STATUS	58	1) No one at work knows I'm pregnant 2) Only my commander knows I'm pregnant 3) Most of the people at work know I'm pregnant
discrim			Mean of exclus racedis favor sexhar unwant gendis
harass			Mean of exclus racedis favor sexhar gendis

USE THE FOLLOWING SCALE TO ANSWER THE QUESTIONS BELOW:
1) ALWAYS 2) MANY TIMES 3) SOMETIMES 4) A FEW TIMES 5) NEVER

Prior to pregnancy, in your present unit have you experienced incidences of:

43.	PEXCLUS	59	Exclusion
44.	PRACEDIS	60	Racial discrimination
45.	FAVOR	61	Favoritism
46.	PSEXHAR	62	Sexual harassment
47.	PUNWANT	63	Unwanted touching
48.	PGENDIS	64	Gender discrimination

Before you found out you were pregnant:
1) STRONGLY DISAGREE------ 5) STRONGLY AGREE

49.	PCOMCLI1	65	Your commander was supportive of your pregnancy
50.	PCOMCLI2	66	The command climate was positive
51.	PCOWORK1	67	You and your coworkers got along well
52.	PCOHESIO	68	You felt that your unit was cohesive
53.	PSAT	69	You were satisfied with your work overall
54.	PMORALE	70	Your morale was high
55.	PCOMMIT	71	You were committed to the Army/Navy/Air Force/Marines/Coast Guard
56.	PTURNOVR	72	Before you were pregnant, did you plan to: 1) leave military service at the end of your enlistment 2) Reenlist, but undecided about a career 3) Stay in the military for 20 years 4) Stay in the military for more than 20 years
57.	TURNOVER	73	Now that you are pregnant, do you plan to: 1) Leave military service before the end of your enlistment 2) leave military service at the end of your enlistment 3) Reenlist, but undecided about a career 4) Stay in the military for 20 years 5) Stay in the military for more than 20 years

Use the following scale to indicate the degree to which you agree or disagree with the following statements: **1) strongly disagree----- 5) strongly agree**

Before I became pregnant:

58.	PPERF1	74	I put in a great deal of effort at work
59.	PPERF2	75	My work performance was considered superior

60. PPERF3	76	I really cared about my work performance

Since I became pregnant:

61. PERF1	77	I put in a great deal of effort at work
62. PERF2	78	My work performance is considered superior
63. PERF3	79	I really cared about my work performance
perform		Mean of perf1-perf3
pperform		Mean pperf1-pperf3
64. PREGPLAN	80	My pregnancy was planned 1) yes 2) no
65. PREGTIME	81	My pregnancy happened in the time frame I planned? 1) yes 2) no
66. TIMECAR	82	Is there a good time during a military career to become pregnant 1) yes 2) no

If yes, when?

67. WHEN1	83	TDA assignment
68. WHEN2	84	Field assignment
69. WHEN3	85	CONUS Continental U.S.
70. WHEN4	86	OCONUS Overseas Duty
71. WHEN5	87	Before a military school
72. WHEN6	88	During a military school
73. WHEN7	89	After a military school
74. WHEN8	90	After a (PCS) Permanent change station
75. WHEN9	91	Before a PCS
76. WHEN10	92	While in a leadership position

77. WHEN11	93	After a leadership position
78. WHEN12	94	While in a staff position
79. WHEN13	95	After a staff position

I planned my pregnancy to occur during:

78. PLAN1	96	TDA assignment
79. PLAN2	97	Field assignment
80. PLAN3	98	CONUS
81. PLAN4	99	OCONUS
82. PLAN5	100	Before a military school
83. PLAN6	101	During a military school
84. PLAN7	102	After a military school
85. PLAN8	103	After a PCS
86. PLAN9	104	Before a PCS
87. PLAN10	105	While in a leadership position
88. PLAN11	106	After a leadership position
89. PLAN12	107	While in a staff position
90. PLAN13	108	After a staff position
91. MISS	109	In general, how many days of work have you missed since you became pregnant 1) less than one day a month 2) One day a month 3) two to three days a month 4) one day a week 5) two days a week 6) more than two days a week

92. PMISS 110 In general, how many days of work did you miss before you became pregnant
1) less than one day a month
2) One day a month
3) two to three days a month
4) one day a week
5) two days a week
6) more than two days a week

93. LEAVEX 111 Should maternity leave be extended
1) yes
2) no

If yes, how long? (qualitative data)

94. REASSIG1 112 Were you assigned to a different job by your commander because you were pregnant
1) yes
2) no

95. REASSIG2 113 Were you reassigned to a different job because of exposure to hazardous materials?
1) Yes
2) No

96. REASSIG3 114 Were you reassigned to a different job because of physical requirements?
1) Yes
2) No

If yes, use the following scale to answer the next two questions strongly disagree-strongly agree

97. REASSIG4 115 The work reassignment is meaningful

98. REASSIG5 116 The work reassignment was necessary

Use the following scale to answer the questions below:
1) Very negatively 2) Negatively 3) No effect
4) Positively 5)Very positively

99. REASSIG6	117	How do you think your performance evaluations will be affected because of your work reassignment
100. REASSIG7	118	How do you think your chances of promotion will be affected because of your work reassignment
101. PGCAREER	119	How do you think being pregnant has affected your chances to make the military a career
102. PGPROMOT	120	How do you think your pregnancy will affect your career progression or promotion?

Use the following scale to answer the questions below:
1) None at all
2) A little bit
3) some
4) Quite a bit
5) Extreme

On the whole how much stress do you think came from the problems or concerns with:

103. STRESS1	121	Family
104. STRESS2	122	Financial matters
105. STRESS3	123	People I work with
106. STRESS4	124	Work
107. STRESS5	125	Pregnancy

stress Mean of stress1 stress2 stress4 stress5

Use the scale to indicate how much stress you may have experienced in regard to the following events:

1) A great deal
2) Quite a bit
3) Some
4) A little bit
5) Not at all

108.	TRANS1	126	Worry about being a good parent
109.	TRANS2	127	Worry about the added responsibility of a child
110.	TRANS3	128	Worry about drifting apart from your spouse
111.	TRANS4	129	Worry about sexual relations
112.	TRANS5	130	Worry about not having enough time to spend with my husband
113.	TRANS6	131	Worry about changes in marital relationship
114.	TRANS7	132	Worry about not giving spouse enough affection and attention
115.	TRANS8	133	Worry about having adequate finances
116.	TRANS9	134	Worry about losing out in my career/job
117.	TRANS10	135	Worry about providing adequate care for infant and having to work
transits			Mean of trans3-trans7
transitw			Mean of trans1 trans2 trans10

Use the following scale to answer the questions below:
1) Very unhelpful 2) somewhat unhelpful
3) Neutral
4) Somewhat helpful 5) Very helpful

How helpful have the following been in helping you to cope with your pregnancy and stress

118.	COPE1	136	Family members
119.	COPE2	137	Unit members
120.	COPE3	138	Friends
121.	COPE4	139	Professional therapist
122.	COPE5	140	Chaplain/Ministers/Clergy

123. COPE6	141	Doctor
124. COPE7	142	Marine/Navy/Army/AirForce Community ervices
125. COPE8	143	Family support group
126. COPE9	144	Do you plan to attend childbirth education classes 1) yes 2) no
127. COPE10	145	Do plan to attend preparation for parenting classes 1) yes 2) no
coping		Mean of cope1-cope3 cope6

Select the response that best describes how much discomfort that problem has caused you during the past week
0) none
1) a little bit
2) moderate
3) quite a bit
4) extreme

128. BSI1	146	Nervousness or shakiness inside
129. BSI2	147	Repeated unpleasant thoughts
130. BSI3	148	Faintness or dizziness
131. BSI4	149	Loss of sexual interest or pleasure
132. BSI5	150	Feeling critical of others
133. BSI6	151	The idea that someone else can control your thoughts
134. BSI7	152	Feeling others are to blame for most of your troubles
135. BSI8	153	Trouble remembering things

136. BSI9	154	Feeling easily annoyed or irritated
137. BSI10	155	Pains in heart or chest
138. BSI11	156	Feeling afraid in open spaces
139. BSI12	157	Feeling low in energy or slowed down
140. BSI13	158	Thoughts of ending your life
141. BSI14	159	Feeling most people cannot be trusted
142. BSI15	160	Poor appetite
143. BSI16	161	Crying easily
144. BSI17	162	Suddenly scared for no reason
145. BSI18	163	Temper outbursts that you could not control
146. BSI19	164	Feeling lonely even when you are with people
147. BSI20	165	Feeling blocked in getting things done
148. BIS21	166	Feeling lonely
149. BSI22	167	Feeling blue
150. BSI23	168	Worrying too much about things
151. BSI24	169	Feeling no interest in things
152. BSI25	170	Feeling fearful
153. BSI26	171	Your feelings being easily hurt
154. BSI27	172	Feeling others do not understand you or are unsympathetic
155. BSI28	173	Feeling that people are unfriendly or dislike you

156. BSI29	174	Feeling inferior to others
157. BSI30	175	Nausea or upset stomach
158. BSI31	176	Feeling that you are being watched or talked about by others
159. BSI32	177	Trouble falling asleep
160. BSI33	178	Having to check and double-check what you do
161. BSI34	179	Difficulty making decisions
162. BSI35	180	Feeling afraid to travel
163. BSI36	181	Trouble getting your breath
164. BSI37	182	Hot or cold spells
165. BSI38	183	Having to avoid certain things, places or activities because they frighten you
166. BSI39	184	Your mind going blank
167. BSI40	185	Numbness or tingling in parts of your body
168. BSI41	186	The idea that you should be punished for your sins
169. BSI42	187	Feeling hopeless about the future
170. BSI43	188	Trouble concentrating
171. BSI44	189	Feeling weak in parts of your body
172. BSI45	190	Feeling tense or keyed up
173. BSI46	191	Thoughts of death or dying
174. BSI47	192	Having urges to beat, injure or harm someone
175. BSI48	193	Sleep that is restless or disturbed

176. BSI49	194	Having urges to break or smash things
177. BSI50	195	Feeling very self-conscious with others
178. BSI51	196	Feeling uneasy in crowds
179. BSI52	197	Never feeling close to another person
180. BSI53	198	Spells of terror or panic
181. BSI54	199	Getting into frequent arguments
182. BSI55	200	Feeling nervous when you are alone
183. BSI56	201	Others not giving you proper credit for your achievements
184. BSI57	202	Feeling so restless you couldn't sit still
185. BSI58	203	Feelings of worthlessness
186. BSI59	204	Feeling that people will take advantage of you if you let them
187. BSI60	205	Thoughts and images of frightening nature
188. BSI61	206	Feelings of guilt
189. BSI62	207	The idea that something is wrong with your mind
190. BSI63	208	Spending less time with peers and friends
somatic		Mean of BSI 3, 10, 36, 30, 37, 40, 44
obscomp		Mean of BSI 8, 20, 33, 34, 39, 43
interpc		Mean of BSI 26, 28, 29, 50
depress		Mean of BSI 13, 21 22 24 42 58
anxiety		Mean of BSI 1 17 25 45 53 57
hostile		Mean of BSI 9 18 47 49 54
phobanx		Mean of BSI 11 35 38 51 55
paridea		Mean of BSI 7 14 31 56 59
psycot		Mean of BSI 6 19 41 52 62
trauma		Mean of BSI 2 4 8 9 11 12 16 17 19 21-25 27 32 35 38 43-46 48 51 53 60 61
GSI		Mean of BSI 1 3 6-11 13-15 17-22 24-26 28-47 49-59 62 63

If you have had a previous pregnancy please continue. If you have not please skip.

191. MED1 209 How many times have you been pregnant

1) never before	4) 3
2) 1	5) 4
3) 2	6) 5+

For the following items use the following scale:

1) 0	4) 3
2) 1	5) 4
3) 2	6) 5+

192. MED2 210 Number of full term deliveries

193. MED3 211 Number of premature deliveries

194. MED4 212 Number of abortions
195. MED5 213 Number of miscarriages

196. MED6 214 Number of living children

197. MED7 215 Number of vaginal deliveries

198. MED8 216 Number of "c" sections

Did you have any of the following problems during previous pregnancies (check all that apply)

199. PGPROB1 217 premature contractions

200. PGPROB2 218 high blood pressure

201. PGPROB3 219 diabetes

202. PGPROB4 220 lung problems

203. PGPROB5 221 kidney/bladder problems

204. PGPROB6 222 vaginal bleeding

205. PGPROB7 223 twins or triplets

206. PGPROB8 224 baby had birth defects

207. PGPROB9	225	Water broke too early
209. PGPROB10	226	Vaginal/pelvic infection
210. PGPROB11	227	Intestinal/gall bladder/liver problem
211. PGPROB12	228	Toxemia
212. PGPROB13	229	Heart problem
213. PGPROB14	230	Lupus
214. PGPROB15	231	Swelling/edema
215. PGPROB16	232	Baby not growing
216. PGPROB17	233	Placenta previa/abruption
217. PGPROB18	234	Incompetent cervix or cerclage seizures
218. PGPROB19	235	Other* listed
multprob		Number of pgprob1-pgprob19

Response to the following:
1) yes
2) no

219. MED10	236	Were you confined to bedrest during previous pregnancy
220. MED11	237	Were you hospitalized for pregnancy complications
221. MED12	238	Did you work during your previous pregnancy
222. MED13	239	Did you stop working before delivery
223. MED14	240	Were you exposed to hazardous chemicals/materials at work

During this pregnancy have you experienced the following:

224. PGTHIS1	241	Premature contractions
225. PGTHIS2	242	High blood pressure
226. PGTHIS3	243	Diabetes
227. PGTHIS4	244	Lung problems
228. PGTHIS5	245	Kidney/bladder problems
229. PGTHIS6	246	Vaginal bleeding
230. PGTHIS7	247	Twins or triplets
231. PGTHIS8	248	Water broke too early
232. PGTHIS9	249	Vaginal/pelvic infection
233. PGTHIS10	250	Intestinal/gall bladder/liver problem
234. PGTHIS11	251	Toxemia
235. PGTHIS12	252	Heart problem
236. PGTHIS13	253	Lupus
237. PGTHIS14	254	Swelling/edema
238. PGTHIS15	255	Baby not growing
239. PGTHIS16	256	Placenta previa/abruption
240. PGTHIS17	257	Incompetent cervix or cerclage seizures
241. PGTHIS18	258	Other* listed
multpro2		Number of pgthis1-pgthis18

Since you found out you were pregnant have you reduced your use of:
1) yes
2) no
3) never used

242. MED16	259	Alcohol
243. MED17	260	Cigarettes
244. MED18	261	Caffeine

Response:
1) yes
2) no

245. MED19	262	Have you been confined to bedrest during this pregnancy
246. MED20	263	Have you been hospitalized for pregnancy complications
247. MED 21	264	Are you exposed to hazardous chemicals/materials at work

FOLLOW UP QUESTIONNAIRE

Variable	Field	Item
ID2	1-9	Social security number
GRADE2	10-11	Military grade: 1) E-1 8) E-8 15) 0-2 2) E-2 9) E-9 16) 0-3 3) E-3 10) WO1 17) 0-4 4) E-4 11) CW2 18) 0-5 5) E-5 12) CW3 19) 0-6 6) E-6 13) CW4 7) E-7 14) 0-1
MARITAL2	12	Marital status: 1) Single 4) Widowed 2) Married 5) Divorced 3) Separated
IN MOS2	13	Are you currently working in your assigned MOS? 1) yes 2) no
HOURS2	14-15	How many hours a week do you currently work?
HOUSE2	16	What are your housing arrangements? 1) Military housing 3) Renting home 2) Apartment 4) Own home
WKSPREG2	17-18	How many weeks pregnant are you currently?
PREGUNT2 your	19	How many other pregnant women are there in unit? 1) 0 4) 3 7) Do not know 2) 1 5) 4 3) 2 6) 5+

Use the following scale to indicate the extent to which you AGREE or DISAGREE with the following statements:

1) Strongly disagree 2) Disagree 3) Undecided
4) Agree 5) Strongly agree 9) Not applicable

Fcomcli1	20	Your commander is supportive of your pregnancy
Fcomcli2	21	The command climate is positive
Fpregpr1	22	Your pregnancy profile has been honored without question or harassment
Fpregpr2	23	Medically prescribed work rests have been honored without question or harassment.
Fcomcli3	24	Leaders are supportive of pregnancy related "sick days"
Fcomcli4	25	You have not been hassled about time off for pregnancy-related medical appointments
Fcomcli5	26	You have informed your chain of command about any negative remarks that you have received about your pregnancy.
Fcomcli6	27	Your chain of command has acted to support you in response to negative remarks about your pregnancy
Fcowork1	28	You and your co-workers get along well
Fcowork2	29	Co-workers have not made negative remarks about you missing PT or FTX because of your pregnancy
Fcowork3	30	Co-workers have been supportive of your pregnancy
Fcowork4	31	Co-workers are not resentful of time you missed from work because of your pregnancy
Fcowork5	32	Co-workers have had their workload increased because of manpower loss due to your pregnancy
Fcowork6	33	Co-workers are resentful of work load increases because of your pregnancy
Fcowork7	34	Co-workers include you in non-work activities

Fcohesio	35	You feel that your unit is cohesive
Fmorale	36	Your morale is high
Fcommit	37	You are committed to the Army/Navy/Air Force/Marines/Coast Guard
Fpgsup		Mean of fpregpro1 fpregpro2 fcomcli3 fcomcli4
Fcoworker		Mean of fcowork1-fcowork4 fcowork7 fcohesio
Fcomsup		Mean of fcomcli1 fcomcli2 fcomcli6

Use the following scale to answer the questions below:

1) Always 2) Many times
3) Sometimes 4) A few times 5) Never

During pregnancy, in your present unit have you experienced incidences of:

Fexclus	38	Exclusion
Fracedis	39	Racial discrimination
Ffavor	40	Favoritism
Fharass	41	Sexual Harassment
Ftouch	42	Unwanted Touching
Fgend	43	Gender Discrimination
Freasig1	44	Were you assigned to a different job by your commander because you were pregnant? 1) yes 2) no
Freasig2	45	Were you assigned to a different job because of your exposure to hazardous materials? 1) yes 2) no
Freasig3	46	Were you assigned to a different job because of physical requirements 1) yes 2) no

---If yes, use the following scale to answer the next two questions:

1) Strongly disagree 2) Disagree
3) Undecided
4) Agree 5) Strongly Agree

Freasig4	47	The work is meaningful
Freasig5	48	The work reassignment was necessary

---Use the following scale to answer the questions below:

1) Very negatively 2) Negatively
3) No effect
4) Positively 5) Very positively

Freasig6	49	How do you think your performance evaluations will be affected because of your work reassignment?
Freasig7	50	How do you think your chances of promotion will be affected because of your work reassignment?
Fpgcarer	51	How do you think being pregnant has affected your chances to make the military a career?
Fpgprom	52	How do you think your pregnancy will affect your career progression or promotion?

---Use the following scale to answer the questions below:

1) None at all
2) A little bit 3) Some
4) Quite a bit 5) Extreme

---Think about life since you got pregnant. On the whole, how much stress do you think came from the problems or concerns with:

STRSS1	53	Family matters
STRSS2	54	Financial matters
STRSS3	55	People I work with
STRSS4	56	Work itself
STRSS5	57	Pregnancy

---Use the scale below to indicate how much stress you may have experienced in regard to the following events:

1) A great deal
2) Quite a bit
3) Some
4) A little bit
5) Not at all

TRANS1 2	58	Worry about being a good parent
TRANS2 2	59	Worry about the added responsibility of a child
TRANS3 2	60	Worry about drifting apart from your spouse
TRANS4 2	61	Worry about sexual relations
TRANS5 2	62	Worry about not having enough time to spend with my husband
TRANS6 2	63	Worry about changes in marital relationship
TRANS7 2	64	Worry about not giving spouse enough affection and attention
TRANS8 2	65	Worry about having adequate finances
TRANS9 2	66	Worry about losing out in my career/job
TRNS10 2	67	Worry about providing adequate care for infant and having to work

Use the following scale to answer the questions below:

1) None
2) A Little Bit
3) Moderate
4) Quite a Bit
5) Extreme

Describe how much Discomfort the following problems have caused you DURING THE PAST WEEK:

BSI1B	68	Nervousness or shakiness inside
BSI2B	69	Repeated unpleasant thoughts
BSI3B	70	Faintness or dizziness

BSI4B	71	Loss of sexual interest or pleasure
BSI5B	72	Feeling critical of others
BSI6B	73	The idea that someone else can control your thoughts
BSI7B	74	Feeling others are to blame for most of your troubles
BSI8B	75	Trouble remembering things
BSI9B	76	Feeling easily annoyed or irritated
BSI10B	77	Pains in heart or chest
BSI11B	78	Feeling afraid in open spaces
BSI12B	79	Feeling low in energy or slowed down
BSI13B	80	Thoughts of ending your life
BSI14B	81	Feeling most people cannot be trusted
BSI15B	82	Poor appetite
BSI16B	83	Crying easily
BSI17B	84	Suddenly scared for no reason
BSI18B	85	Temper outbursts that you could not control
BSI19B	86	Feeling lonely even when you are withpeople
BSI20B	87	Feeling blocked in getting things done
BIS21B	88	Feeling lonely
BSI22B	89	Feeling blue
BSI23B	90	Worrying too much about things
BSI24B	91	Feeling no interest in things

BSI25B	92	Feeling fearful
BSI26B	93	Your feelings being easily hurt
BSI27B	94	Feeling others do not understand you or are unsympathetic
BSI28B	95	Feeling that people are unfriendly or dislike you
BSI29B	96	Feeling inferior to others
BSI30B	97	Nausea or upset stomach
BSI31B	98	Feeling that you are being watched or talked about by others
BSI32B	99	Trouble falling asleep
BSI33B	100	Having to check and double-check what you do
BSI34B	101	Difficulty making decisions
BSI35B	102	Feeling afraid to travel
BSI36B	103	Trouble getting your breath
BSI37B	104	Hot or cold spells
BSI38B	105	Having to avoid certain things, places or activities because they frighten you
BSI39B	106	Your mind going blank
BSI40B	107	Numbness or tingling in parts of your body
BSI41B	108	The idea that you should be punished for your sins
BSI42B	109	Feeling hopeless about the future
BSI43B	110	Trouble concentrating
BSI44B	111	Feeling weak in parts of your body

BSI45B	112	Feeling tense or keyed up
BSI46B	113	Thoughts of death or dying
BSI47B	114	Having urges to beat, injure or harm someone
BSI48B	115	Sleep that is restless or disturbed
BSI49B	116	Having urges to break or smash things
BSI50B	117	Feeling very self-conscious with others
BSI51B	118	Feeling uneasy in crowds
BSI52B	119	Never feeling close to another person
BSI53B	120	Spells of terror or panic
BSI54B	121	Getting into frequent arguments
BSI55B	122	Feeling nervous when you are alone
BSI56B	123	Others not giving you proper credit for your achievements
BSI57B	124	Feeling so restless you couldn't sit still
BSI58B	125	Feelings of worthlessness
BSI59B	126	Feeling that people will take advantage of you if you let them
BSI60B	127	Thoughts and images of frightening nature
BSI61B	128	Feelings of guilt
BSI62B	129	The idea that something is wrong with your mind
BSI63B	130	Spending less time with peers and friends

---Use the following scale to answer the questions below:

1) Very unhelpful
2) Somewhat unhelpful
3) Neutral
4) Somewhat helpful
5) Very helpful
9) Not applicable

How helpful have the following been in helping you cope with your pregnancy and stress?

FCOPE1	131	Family members
FCOPE2	132	Unit members
FCOPE3	133	Friends
FCOPE4	134	Professional therapist
FCOPE5	135	Chaplains/Ministers/Clergy
FCOPE6	136	Doctor (Physician)
FCOPE7	137	Marine/Navy/Army Community Services
FCOPE8	138	Family Support Groups
COPEF9	139	Do you plan to attend childbirth education classes? 1) yes 2) no
FCOPE10	140	Do you plan to attend preparation for parenting classes 1) yes 2) no
Fpgplan	141	My pregnancy was planned 1) yes 2) no
Fpgtime	142	My pregnancy happened in the time frame I planned 1) yes 2) no

Fpgcar 143 Is there a good time during a military career to become pregnant?

1) yes 2) no

TIME4 2 144-156 133. If yes, when?

1) TDA assignment
2) Field assignment
3) CONUS
4) OCONUS
5) Before a military school
6) During a military school
7) After a military school
8) After a PCS
9) Before a PCS
10) While in a leadership position
11) After a leadership position
12) While in a staff position
13) After a staff position

TIME5 2 157-169 I planned my pregnancy to occur during: (Check all)

1) TDA assignment
2) Field assignment
3) CONUS
4) OCONUS
5) Before a military school
6) During a military school
7) After a military school
8) After a PCS
9) Before a PCS
10) While in a leadership position
11) After a leadership position
12) While in a staff position
13) After a staff position

Miss2 170 In general, how many days of work have you missed SINCE you became pregnant?

1) Less than one day a month
2) One day a month
3) Two to three days a month
4) One day a week
5) Two days a week
6) More than two days a week

TIME8 2 171 136. Should maternity leave be extended?
1) yes
2) no

If yes, how long? (Qualitative data)

Fpgprob 172-189 Have you had any of the following problems during THIS pregnancy?

1) premature contractions
2) high blood pressure
3) diabetes
4) lung problems
5) kidney/bladder problems
6) vaginal bleeding
7) twins or triplets
8) water broke too early
9) vaginal/pelvic infection
10) intestinal/gall bladder/liver problems
11) toxemia
12) heart problems
13) lupus
14) swelling/edema
15) baby was not growing
16) placenta previa/abruption
17) incompetent cervix or cerclage seizures
18) other

Medprob2 Number of medical conditions

Use the following scale:
1) yes 2) no 3) never used

Since you found out you were pregnant, have you reduced your use of:

FMED16 190 Alcohol

FMED17 191 Cigarettes

FMED18 192 Caffeine

FMED19 193 Have you been confined to bedrest during this pregnancy?

FMED20	194	Have you been hospitalized for pregnancy complications?
FMED21	195	Are you exposed to hazardous chemicals or materials at work?

APPENDIX B
PREGNANCY AND ORGANIZATIONAL BEHAVIOR
DELIVERY OUTCOME DATA CODEBOOK

VARIABLE	ITEM			FIELD
Name	Do not code-do not data enter			
Age	Do not code-do not data enter			
1. SSN3	Social Security Number			1-9
Clinic	Do not code-do not data enter			
EDC	Do not code-do not data enter			
2. GEST3	Number of weeks/days pregnant at delivery i.e., 40 6/7 weeks: 40.86 *round off to last full week in analyses			10-13
3. GRAVITY	The first number is the number of pregnancies			14
4. PARITY	The second number is the number of live births			15
5. PRESENT1	Head position:	1) OA 2) VTX 3) OP 4) Breech 5) LOA	6) VTX & OR *(VTX)* 7) ROA 8) OH *(drop)* 9) GA *(drop)*	16
Present2	1) VTX 2) Breech			
Position	1) OA 2) OP 3) LOA 4) ROA * all positions are VTX presentation, no position for other presentations			

6. MEMRUP	1) AROM assisted rupture of membranes 2) SROM spontaneous rupture of membrane *3) ANON-- recoded to 1* *4) SKOM-- recoded to 2*	17
7. MEMCOLOR	1) clear *(fluid yes)* 3) mechonium *(mech yes)* 5) digo-no flluid *(fluid not* * *no cloudy or bloody 2 or 4*	
Fluid	1) no 2) yes	
Mechonium	1) no 2) yes	
8. INDUCT	0) none 1) pitocin 2) IUFD *(fetal death)--recoded nbabcom4=04* 3) narcotics 4) pitocin & narcotics 5) intocin	19
Pitocin	1) none 2) pitocin induction 3) pitocin augmentation 4) pitocin unspecified	51
9. DELIVERY	1) no interference-vaginal: SVD 2) forceps delivery-vaginal 3) ceserean section 4) vacuum assist	20
delivery date	Do not code do not data enter	
10. EPISIO1		

00) none	07) NL	21-22
01) MLE *(mle)*	08) labial tear (*lac)*	
02) MLE 1 *(mle)*	09) bilat labial (*lac)*	
03) MLE 2 *(mle)*	10) libial abrasions (*lac)*	
04) MLE 3	11) sidewall laceration (*lac)* (vaginal)	
05) MLE 4		
06) ABD (*c* sect)	12) perierethral (*lac)*	

Episio2	1) none 2) MLE, 1, 2 3) MLE 3 4) MLE 4 5) NL	
laceration	1) none 2) labial tear 3) bilateral tear 4) labial abrasions 5) sidewall laceration 6) periuretheral	
11. APGAR1	The first number is the APGAR at one minute (i.e., 07)	23-24
12. APGAR5	The second number is the APGAR at five minutes (i.e., 07)	25-26
13. PLACENTA	1) in tact-complete 2) 3V/I 3) Complete w/3V 4) manual 5) to lab 6) frag membrane 7) spontaneous	27
Placent2	1) spontaneous 2) manual (exclude c section)	
Placent3	1) Complet in tact 2) fram membrane 3) undetermined (to the lab)	
register #	Do not code-do not data enter	
14. GENDER	1) male 2) female	28
15. WEIGHT	Gram weight	29-32
length	Do not code-do not data enter	
rh factor	Do not code-do not data enter	
father notified	Do not code-do not data enter	

16. ANALGES1	1) nubain 2) phenegran 3) nubain & phenegram 4) demeral & phenegram 5) morphine	0) none blank = none	33
Anaelges2	1) no 2) yes		
17. CONDITIONS: MOTHER (up to 3)	List of text for mother 01) asthma 02) sickle cell trait 03) GBS 04) maternal temp 05) repeat "C" section 06) Failure to progress/arrest of descent 07) suspected chorio 08) arrest of dialation 09) IUGR 10) GDM compound 11) presentation of hand 12) chorio (AMP-GET) 13) prolonged 2nd stage 14) maternal exhaustion 15) thick mec. 16) cystotomy & repair 17) temperature 18) low platelets 19) uterine rupture 20) short cord 21) non-reassuring tracing 22) pseudotumor 23) cerebri 24) twin gest 25) Rx'd w/emycin 26) AFI 27) brady cardia 28) severe preeclampsia 29) IUFD 30) gest. Diabetes A1 31) maternal adrenal insufficiency 32) anemia 33) hep A, B carrier 34) obesity 35) D&C (retained placenta)		34-35 36-37 38-39

36) preclampsia
37) low lying placenta
38) kidney stones
39) hypothyroids
40) rectal fistula
41) active HSV in labor
42) hemorrhoids
43) hypertension
44) urinary tract infection
45) no amnio fluid
46) STD clamedia
47) smoker
48) fibroid group strep
49) Hx rape - VIP
50) Oligo-amniotic fluid
51) Precipitous
52) Rubella
53) HSV-herpes
54) Transverse lin
55) vaginal wall laceration repair
56) mechonium in abd
57) positive PPD (TB)
58) diabetes ADM
59) Hydraminosis
60) PTL
61) pylenephritis
62) PROM
63) Staph infection
64) Cyst
65) Malpresentation of baby
66) hematemesis (pure blood)
67) STD
68) rape (see code 49)
69) amnio infusion
70) AMA (advanced maternal age)
71) PIH
72) low platelets (see #18)
73) HGSIL (high grade squaemaus intrax lesion dysplasig-cervix
74) history preterm labor

17. CONDITIONS:	List of text for mother	34-35
MOTHER	01) asthma	36-37
(up to 3)	02) sickle cell trait	38-39
	03) GBS	

MOMCOMP1-3

04) maternal temp
05) repeat "C" section
06) Failure to progress/arrest of descent
07) suspected chorio
08) arrest of dialation
09) IUGR interuniterine growth retardation
10) GDM gestational diabetes
11) chorio (AMP-GET)
12) prolonged 2nd stage
13) maternal exhaustion
14) cystotomy & repair
15) low platelets
16) uterine rupture
17) non-reassuring tracing, brady cardia, tachycardia, severe variables
18) pseudotumor-cerebri
19) twin gest
20) severe preeclampsia
21) IUFD
22) maternal adrenal insufficiency
23) anemia
24) hep A, B carrier
25) obesity
26) D&C (retained placenta)
27) preclampsia
28) low lying placenta
29) kidney stones
30) hypothyroids
31) rectal fistula
32) active HSV in labor
33) hemorrhoids
34) hypertension
35) urinary tract infection
36) no amnio fluid, oligo
37) STD chlamidia
38) smoker
39) fibroid group strep
40) rape
41) Precipitous
42) Rubella
43) HSV-herpes
44) mechonium in abd
45) positive PPD (TB)
46) diabetes ADM adult onset

47) Hydramnosys
48) PTL preterm labor
49) pyelonephritis
50) PROM
51) Staph infection
52) Cyst
53) hematemesis (puke blood)
54) STD
55) amnio infusion
56) AMA (advanced maternal age)
57) PIH
58) HGSIL (high grade squaemaus intrax lesion dysplasig-cervix)
59) ASB asymptomatic bacteria
60) intolerance to contractions
61) fetal distress

18. CONDITIONS: BABY (up to 3)	List of text for baby	40-41
	01) nuchal chord problem	42-43
	02) shoulder dystocia	44-45
	03) intolerance to contractions	
	04) knot in cord	
	05) terminal mec.	
	06) fetal distress	
	07) RO sepsis	
	08) fetal tachycardia	
	09) severe variables	
	10) IUFD	
	11) infant death	
	12) apnea (primary)	
	13) twins	
	14) NICU	
	15) compound presentation	
	16) temperature	
	17) abdominal wall defect	
	18) ruptured cord	
	19) deceleration	
	20) nonreassuring tracing	
	21) omphalocele	
	22) terminal bradychardia	
	23) hypoplasia	
	24) bilateral fetal renal cysts	

18. CONDITIONS:	List of text for baby	40-41
BABY	01) nuchal chord problem	42-43
(up to 3)	02) shoulder dystocia	44-45
	03) RO sepsis	
BABCOMP1-3	04) IUFD	
	05) infant death	
	06) apnea (primary)	
	07) twins	
	08) NICU	
	09) temperature	
	10) abdominal wall defect	
	11) omphalocele	
	12) hypoplasig bilateral fetal renal cysts	
19. ANESTH	1) none	46
	2) epidural	
	3) spinal	
	4) caudal	
	5) general	
	6) local	
	7) epidural & local/spinal	
	8) Pudendal	
	9) Nubain & Phenergan	
Anesth2	1) none	
	2) epidural	
	3) spinal-caudal	
	4) general	
	5) local	
	6) epidural & local/spinal	
	7) pudendal	
	8) nubain & phenergan	
anesthetist	do not code-do not data enter	
nurses	do not code-do not data enter	
physician	do not code-do not data enter	
20. EBL	Estimated blood loss	47-50

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